AMERICAN GAS

Association

MONTHLY

APRIL 1945 • VOL. 27 · NO. 4

Your "bee"...

You've got a new-kitchen bee buzzing in your bonnet. You want a *better* kitchen . . . cooler, cleaner . . . without a single lingering odor. Everything streamlined for easier working . . . a beautiful, *livable* place!

our "baby"...

It's a plan the whole Gas industry is working on—and it's wonderful. It's going to bring you the most thoroughly coordinated kitchens since Adam and Eve set up light housekeeping! Cabinets and appliances will fit together from stem to stern. No cracks or crannies to catch dust and dirt. Nothing to stick out in unstreamlined, higgledy-piggledy fashion.

and look what's ahead!

ANOTHER "NEW FREEDOM GAS KITCHEN" DESIGN

a kitchen that kisses your "chores" good-bye!

You'll have more fun, more freedom in these marvelous, modern workshops. For in your "New Freedom Gas Kitchen"* of tomorrow you'll say: **GOOD-BYE TO TIME-CONSUMING COOKING METHODS . . .** Your new Gas range—whatever its "make"—will bring you faster, easier, *better* cooking than you ever dreamed possible. You'll know it's the last word in cooking perfection by the CP seal it carries! **GOOD-BYE TO EXTRA MARKETING TRIPS . . .** Your new silent Gas refrigerator will be roomier than ever . . . designed to keep *all kinds of food fresh longer*. **GOOD-BYE TO HOT WATER WORRIES . . .** Your new Gas hot water system will supply you with oceans of hot water—for dishes, laundry, baths—at the turn of the tap . . reliably, automatically, economically! Begin planning your "New Freedom Gas Kitchen" now . . . *today!*

CP

GAS

THE WONDER FLAME THAT COOLS AS WELL AS HEATS

AMERICAN GAS ASSOCIATION

*Copyright 1946, American Gas Association

The fabric of the gas industry's postwar suit is now being woven and it gives every indication of being strong and durable. It's being compounded of research in great quantities, advertising and promotion. It's being fashioned by experts. Some progress reports are contained herein—but they are only the beginning, folks, wait 'til the real style show starts. . . . No less attention is being paid to men than to materials. The science of human relations and capabilities in respect to jobs has been given a boost by wartime studies of manpower. Mr. Jolley's committee gives the gas industry an ace in the hole by providing job classification methods that will do much to eliminate labor friction and put the returning serviceman in a job he likes and wants. . . . Two of the ablest authorities in the industry bring house heating into sharp focus. Hall Henry starts an invaluable four-part study which goes deeply into fundamental economic factors influencing the industry's acceptance of this load. "Pres" Morehouse gives cogent proof of the flexibility of gas which guarantees consumer acceptance. . . . This month we salute the Insurance Committee whose achievement-studded record is reviewed by J. G. Reese, one of the founders.

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N. Y.

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JAMES M. BEALL, *Editor*

Gas Industry Program Under Way

PLANS for the prompt initiation of the gas industry's new research and promotional program were made at a meeting March 8 of the special committee which will administer the funds raised by subscription of gas companies throughout the United States and Canada. At this first meeting since the fund was raised, it was reported that the financial goal of $1,400,000 had been passed and that additional funds were forthcoming.

Following a discussion of the ownership and use of any patents that might result from the research projects undertaken, particularly in the field of gas production, recommendations of various committees as to initial expenditures were reviewed and certain allocations of funds were made. Ernest R. Acker, chairman of the Special Committee on Gas Industry Research and Promotional Plan, presided at the meeting which was held at A. G. A. Headquarters in New York City.

Special attention was paid to gasification research projects now under way or contemplated at the Institute of Gas Technology at Chicago. The projects authorized upon recommendations of the Manufactured Gas Department's Gas Production Research Committee, P. T. Dashiell, chairman, include: Gasification of Light Hydrocarbons and of Higher Hydrocarbons; Analysis of Present Equipment and Processes; Reactions between Oxygen, Steam and Carbon; and Sulfur Removal. The project on oxygen reactions was tentatively approved subject to final disposition.

Recommendations of the Coordinating Committee on Research, E. P. Noppel, chairman, covering Domestic Gas, Industrial and Commercial Gas, and General Technical Research Projects to be completed or undertaken during the Association year ending Sept. 30, 1945 were approved as submitted by Mr. Noppel's committee. Among the projects reported were:

Domestic Gas Utilization

Basic domestic gas research projects on cooking, water heating, gas burners and central gas space heating, which have been set up on a continuing basis from year to year and assigned to the A. G. A. Testing Laboratories, will be continued on an accelerated basis. In addition, the Committee on Domestic Gas Research proposes to conduct additional research projects on pilot design, construction and performance; gas-operated summer-winter hookups; home humidity control and possibilities of developing an all-purpose gas cooking machine. The latter projects are being investigated but have not been included in the recommended program at the present time.

Industrial and Commercial Gas Utilization

Active projects in this category which will be continued include:

Research in Controlled Vacuum Heat-Treating

The Application of Forced Combustion to Commercial Cooking and Baking

Investigation of Plug-in Flexible Connections for Gas Appliances

Development of Patch-type Counter Toaster*

Improvement in Non-ferrous Metal Melting through the Application of Direct Radiant Heat*

* Temporarily inactive

Subject to further investigation of facilities and development of detailed working outlines, the Research Coordinating Committee has approved projects in (1) Advanced studies in high speed direct heat-treating, and (2) Studies of various heat rays for transmitting heat and penetrating materials, both high and low temperatures. Funds will be requested for these projects later.

Gas Summer Air Conditioning

Funds for air conditioning research were allocated to complete a survey of water problems encountered with gas equipment and to participate in cooperative research in pressure losses in air ducts. The latter project is expected to establish reliable data on friction losses through air distribution ducts and fittings commonly used in domestic and small commer-

● Opposite: Veteran gas man at work—This character study by Harold Gleason, display manager of the Boston Consolidated Gas Company, shows John McKenna, expert tinsmith who has been employed in the company's meter shop for 40 years.

cial air conditioning systems. It will be conducted by the American Society of Heating and Ventilating Engineers.

General Technical Research

Included among the approved projects in this field are:

Investigation of Controlling and Gauging Combination Wells
Investigation of Natural Gas Hydrates
Completion of Mixed Gas Research and Development of Standard Test Burners
Organic Sulfur Research
Iron Corrosion Fellowship

Some of this work is being conducted by the U. S. Bureau of Mines, part at the A. G. A. Laboratories and the Institute of Gas Technology, while the corrosion fellowship covers work under way at Rutgers University.

National Advertising

Expanded national advertising plans, covering both the domestic and industrial and commercial campaigns, were approved as submitted by H. Carl Wolf, chairman of the National Advertising Committee.

Quarterly Progress Report

It was decided that the Committees conducting research and promotional work underwritten from the new Research and Promotional Fund should provide the Special Committee with quarterly reports on progress made in their activities and expenditures as an aid to the Special Committee in meeting its responsibilities to companies contributing to the Plan.

Promotion

Chairman Acker announced that membership of the new Promotional Committee had been selected and that D. A. Hulcy, president, Lone Star Gas Co., Dallas, Texas, had accepted the chairmanship. This committee will meet shortly to lay out a program and to facilitate the employment of a promotional director at A. G. A. headquarters.

Funds to be Audited

The committee unanimously decided to make arrangements for the Association's auditors to make an annual audit of the receipts and disbursements made during the operation of the plan.

It is now planned that the Special Committee will hold regular quarterly meetings for the purpose of considering progress to date in the activities which it has authorized and for the further purpose of considering any recommendations that may be submitted for additional activities to be financed from the new fund.

Last Gas-Making Plant in Manhattan Shuts Down after Colorful History

AFTER manufacturing gas on Manhattan Island for 120 years, Consolidated Edison Company of New York March 1 shut down the last remaining facilities for making gas in the borough—the O'Connell plant on a site stretching from 20th Street to 22nd Street and from 1st Avenue to the East River Drive, which has been purchased by the Metropolitan Life Insurance Company for a postwar housing development. Manhattan consumers will continue to be served by the Astoria and Hunts Point plants, two of the world's largest and most modern works, which now carry the major part of the system's load, and the Ravenswood and Pelham works which, like the O'Connell plant, serve as standby facilities for periods of great demand.

With the passing of the O'Connell plant, which went into operation early in 1849, will go one of New York's unique institutions, the gas house district, famous in Manhattan song and story for more than a century. Reminders of the familiar scene will remain for some time after the Edison Company has vacated the manufacturing works because the two gas holders and pumping equipment will be in use until late in the year.

The O'Connell plant received its name in 1929, a year after the death of one of its employees. John O'Connell was eighty-nine years old when he died and had worked the last seventy-two of them at the Twenty-first Street plant. His home was in the gashouse district, and his ten children were born there. As the legend goes, he only ventured outside the district five times after his arrival there as a boy of seventeen, fresh from Ireland.

Much of the history of gas manufacture in this country was written in the developments at the O'Connell plant, oldest remaining plant in the New York area and the last of the gas works which were taken over by Consolidated Gas Company in the 1884 merger. O'Connell was the New York Gas Light Company's second plant, the first works having been at Hester and Centre Streets, and at its inception the custom of carrying live coals from an older plant to light the fires of a new one was established. Each plant since that time has been put into operation by coals from another plant to carry on the tradition of the "fires that never go out."

Whale and other fish oils, as well as rosin, had been the fuel used by the New York Gas Light Company until the building of the O'Connell plant. Then, for the new works, the directors turned to imported coals from Liverpool and Newcastle, which produced gas at less cost and therefore enabled the company to reduce its rates.

In the early days of the 21st Street plant, nearby residents were fascinated by the giant telescopic gas holder which alternately rose and subsided within its iron framework. The practice of housing gas holders inside brick buildings had originated in England and been copied in this country and it was not until the middle of the nineteenth century that the need for larger containers brought adoption of the outdoor type, which appeared so strange to the passersby.

At the time of retiring its gas-making equipment, O'Connell plant had a capacity of 38,000,000 cubic feet of gas a day, with storage capacity of 9,000,000 cubic feet.

Associations

●To meet its postwar problems British industry should be organized through trade associations which could advise and cooperate with the government, according to a report of a committee of the Federation of British Industries under the chairmanship of Sir Charles Bruce-Gardner. The report assumes that certain government controls, especially over imports and exports, will have to be continued for a time, and that these controls may be extended unless industry itself take steps to organize for the tasks necessarily in the national interest, to balance Britain's international account and achieve full employment.

Some of the functions of trade associations advocated in the report are: to act as the official channel of communication between the industry and the government; to assist in solving the problems that arise when production and consumption get out of step; to maintain and regulate fair trade practices; to enable the industry to negotiate on equal terms with foreign competitors; to encourage individual and promote cooperative research; to establish efficient and uniform methods of cost accounting; to promote standardization of products and parts wherever suitable; to promote the technical and general knowledge of those engaged in the industry; to improve service to the consumer and quality, design, and methods of production.

Does He Fit the Job?

An illuminating report of the Job Analysis Committee which gives well-defined information on job classification methods

BY C. C. JOLLEY, Chairman

D. L. SEDGWICK

H. F. VOERTMAN

WHY job analysis? Why job descriptions? Why job ratings? In order to appreciate our present thinking about these subjects, let us look back a few years and review some of the major events that started industry to be concerned about manpower and manpower problems.

In 1940, the Selective Service Act was enacted and industry was immediately faced with a personnel problem. The Selective Service Act at the time of its inception did not seem to be too severe and industry was agreeable in meeting its demands. However, soon after the passing of this act we realized we were just beginning a new era; war was declared and Selective Service was called upon to build an army much bigger than our country had ever known.

The building of this huge army and navy was a two-fold manpower problem. Men were required for the armed forces and industry was called upon to expand its resources to attain unheard of production schedules.

Needless to say, the word manpower was heard in every conference, over the radio, and in all our newspapers. Everybody started thinking about men and jobs. Deferments, Manning Tables, replacement schedules, women in industry, training programs were only a few of the problems confronting industry. All of these problems had to be handled efficiently and as quickly as possible; therefore, men in industry soon realized that it would be impossible to plan efficiently without an over-all study of their particular manpower problems.

The first experience with job descriptions and job analysis for many industries came with the Affidavit "Occupational Classification," more commonly referred to as application for draft deferment. This form supplied by the draft boards was tossed around by the legal departments for a while, then operating departments, but soon found its place in the personnel department, or in many cases a department designed to handle Selective Service and manpower problems entirely.

One of the first questions asked on this application for deferment was "Title of the Job"; next, "state his Classification" and next, "Describe the duties actually performed." I am sure all of us can be amused with our early experience in filing applications for draft deferments. After several months' experience we stopped glorifying the individual and talked in specific terms which could be understood by the draft boards.

The filing of manning tables and replacement schedules required close study of the over-all organization and this work could not have been accomplished without some pretense of job analysis and job descriptions.

Another important influence that has affected the thinking of many of us is the increased unionization of industry. Any company having had the experience of negotiating a union contract will appreciate the value of well-defined job descriptions and job ratings. It should be most embarrassing for a company to concede to its union that some jobs are underpaid and others inequalities exist between jobs of equal status and pay. It is much better to have met such adjustments before entering negotiations. Furthermore, the administration of a union contract will be much easier if you have a well-defined path of promotion and definite policies of upgrading and transfers. These policies should be backed with appropriate job ratings and job descriptions.

Another advantage of job ratings and job descriptions will be in our postwar planning and current return of the men in the armed forces. Many men will return to us with five years' experience, some of which may be closely related with his civilian experience. The War Manpower Commission is aware of this and have prepared an occupational dictionary listing the job descriptions as an aid in placing military personnel in civilian jobs.

Quoting from a paper "Job Classification Under Cost Reduction" by A. L. Kress, industrial relations consultant, appearing in Productions Series No. 159 of the American Management Association:

C. C. Jolley

"I should like to urge that job rating and job classification have a definite place in the postwar picture. Certainly you are going to need them more than ever when the wraps

Presented at the Midwest Personnel Conference of the American Gas Association, held March 8 at Kansas City, Missouri. Chairman of the conference was R. B. Harkins, Personnel Director, Panhandle Eastern Pipe Line Co.

are taken off the wage and salary stabilization program and you find yourself sitting across the table bargaining on your rate structure. Only when you have all the facts about the jobs in your plant and can discuss them effectively, can you expect to hold up your end in the negotiations.

And there is still another field in which I suggest that you should be prepared. You should think out the policy of your company on arbitration of wages and job classification in the future. From everything I have seen, I am satisfied that job rating and job classification are here to stay; that many companies have had to adopt them in order to meet the requirements of either the Treasury or the War Labor Board for wage or salary administration purposes. Certainly it would be a great mistake if companies did not salvage those tools and put them to use in their post-war operations."

The foregoing is a resumé of observations while attending various manpower conferences, personnel conferences and other industrial conferences during the past four years. There has been a definite trend in industry, especially the gas

industry to become more personnel minded. We have been slow in realizing the importance of written policies pertaining to employment, seniority, sick benefits, insurance, and many conditions that might affect employees.

Our current subject "Job Analysis and Job Rating" can well be considered a part of our employee relations and will pay dividends if given the proper place in our personnel program. In order that we may have a common ground for discussion, your committee has prepared the following outline to bring out the fundamental difference in these subjects:

Job Analysis

1. Job analysis is a prerequisite to scientific job rating; it precedes the writing of job descriptions and job specifications.

2. Accurate job analysis will include not only a careful enumeration of the requirements of the job itself, but also a careful naming of the job.

3. Scientific job analysis usually includes methods study and occasionally motion and time study.

4. Job analysis may be made for the purpose of improving operations, or in connection with establishing time values for rate setting or production control.

5. Many institutions have job analysis without job rating.

6. There may be two types of job analysis:

(a) The carefully constructed analysis with a complete study of methods.

(b) The other is designed primarily for use of the personnel department. The job analysis used by the personnel man in preparing his job descriptions must include those items that are pertinent to proper job rating, although may not be as detailed as the methods study.

7. Usually the immediate result of job analysis is job description or job specifications.

Job Description

1. Job description is a written record of the duties, responsibilities, conditions and requirements of a particular job. Here again the job description is concerned with the job and not the individual.

2. Job description is a condensed picture of the organization in terms of the factors that affect the worker. It is not ordinarily a record of detail.

3. Job description is to be used in establishing a mutual understanding between the department chief and the personnel manager with reference to the duties of the organization and the kind of person needed to perform those duties.

4. Job description is used in acquainting the new employee with the nature of the work to which he is to be assigned and select persons for the position both from without the organization and by transfers, and in setting the salary at limits for the occupation and in evaluating its importance to the organization in dollars and cents. The job classifications should be prepared by a person fully familiar with the job who avails himself of all the facts and essential information, much of which must come from the worker himself.

Job Rating or Job Evaluation (Used interchangeably)

1. Job rating is the operation of evaluating a particular job in relation to other jobs either within or without an organization, in their relative difficulty and importance.

2. Job rating is concerned with the requirements of the job itself and not the degree with which an individual meets these requirements.

3. Job rating is undertaken primarily to discover the relative requirements of the respective jobs within the plant, to enable management to evaluate its present wages paid for the respective job and to aid management in correcting any inequalities that may be found.

4. There are two types of job rating plans:

1st—*The ranking, classification or grading system*

The ranking or grading system arranges every job in the plant in some order, usually from the job with maximum requirements down to the simplest. In many cases key jobs that are known throughout the plant are rated first, the other job compared and rated accordingly. Grading the jobs in this manner should ignore the qualifications of the person filling the job, as the ranking is of the job and not the worker. The particular worker

may have qualifications that are higher than those required for the job.

2nd—*The Point Rating Plans*

(a) The point rating systems of job evaluation may differ in many details, they are all based upon the theory that it is possible to assign points to the respective factors considered pertinent in evaluating the individual job and that the sum of these points will give an index of the relative significance of the jobs being rated.

(b) It would be possible to use the point system without careful analysis and job descriptions.

(c) Although the various point systems use slightly different factors for evaluating the job, most of them include the following five items:

1. Mental requirements
2. Physical requirements
3. Skill
4. Responsibility
5. Job or working conditions

The number of points assigned to each item will also vary.

5. Job rating is particularly helpful in establishing rates for new jobs.

6. Job rating is a valuable tool in establishing lines of promotion.

7. Job rating has the same relative advantages for salaried positions as for the hourly or so-called field jobs.

8. When jobs are accurately rated and wage rates are set for the jobs, that are

(Continued on page 192)

Economics of Gas House Heating

Fundamental factors to be considered when analyzing the heating load and data on the selection of the most economical gas production methods for supplying it

The following study, to be presented in the A. G. A. MONTHLY in four parts, covers certain fundamental factors which should be considered in a study of the Economics of Heating and the selection of the most economical gas production methods for supplying the heating load.

Part I deals with the development of a simple formula for the determination of the overall unit cost per M.C.F. of making gas for different load factor conditions. This formula enables a quick determination of that "load factor" at which one gas process is more economical than another.

Part II presents a comprehensive analysis of the load characteristics of the heating load. This study brings out the relation of the annual load to certain segments of the daily peaks. A basis for determining the load factor at different segments of the peaks is given. Case studies for several sections of the country are included.

Part III gives an application study of the formula developed in Part I and the load characteristics of Part II. This study shows how to apply the data developed in Part I and II.

Part IV. In this section a few typical gas companies are used to show the application of the fundamental factors (previously developed and discussed) to actual company conditions. The investments for the most economical processes are developed for 10% saturation of house heating. This part of the report advances the study another step in the overall consideration of the economics of heating.

BY HALL M. HENRY*

Director of Gas Operations, Negea Service Corp., Cambridge, Mass.

PART I

Hall M. Henry

IN the course of developing the relative costs of supplying the peaks of heating load with gas produced by different methods the following formula was evolved.

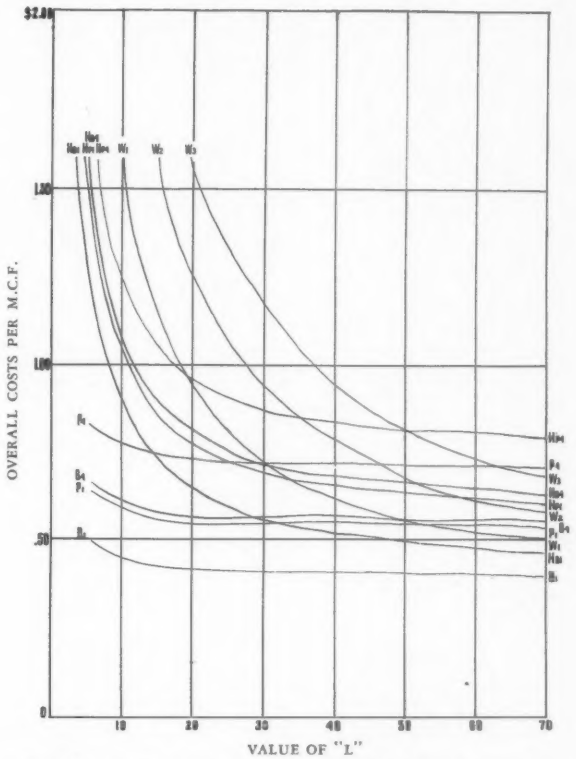
This formula is based on the well-known fact that the relation of the annual load to the peak day or annual load factor is a major determining factor in any consideration of the relative costs of supplying the heating load by different means. For instance, if the ratio of the annual load to the daily load is 365 to 1, we have a 100% load factor and a plant which is economical for this type of load may be more expensive than some other kind of plant when it is necessary to supply a load with a ratio of say 10 to 1 or an annual load factor of about 3%.

Let's take an example as to how the formula was developed:

We Have the Following Assumptions:

Peak degree-day day	77
Annual degree days per season	6801 (10 years average)
Maximum 10-year average degree-day day	46
Season degree-days for days above 46 degree-day day	234

*Chairman, Market and Economic Research Group of the American Gas Association's Committee on Postwar Planning.



Overall cost of gas using different methods of manufacture for varying annual load conditions

W1—Water Gas—$100 Per M.C.F. & 30¢ Gas
W2—Water Gas— 150 Per M.C.F. & 30¢ Gas
W3—Water Gas— 200 Per M.C.F. & 30¢ Gas
HP1—Hydrogen Water Gas—$40 Per M.C.F.—5¢/gal.
HP4—Hydrogen Water Gas—$40 Per M.C.F.—8¢/gal.
HB1—Hydrogen Water Gas—$40 Per M.C.F.—5¢/gal.
HB4—Hydrogen Water Gas—$40 Per M.C.F.—8¢/gal.
P1—Propane-Air—$5.00 Per M.C.F.—5¢/gal.
P4—Propane-Air—$5.00 Per M.C.F.—8¢/gal.
B1—Propane-Air—$5.00 Per M.C.F.—5¢/gal.
B4—Propane-Air—$5.00 Per M.C.F.—8¢/gal.

Cost per M.C.F. daily capacity for water gas plant	$100.00
Holder cost per M.C.F. gas made from water gas plant	$ .30
Cost per M.C.F. (540 B.t.u. equivalent) for propane storage tanks[1]	$ 1.90
Cost per M.C.F. daily capacity propane-air diluting equipment and miscellaneous items	$ 5.00[2]
Cost per gallon for propane	$ .08
Gallons/M.C.F. of 540 B.t.u. equivalent	6
Assume 30 cu.ft./degree-day for a heating customer	

[1] Based on assumed cost of $8000 for 25,000 gal. tank completely installed or equal to $\frac{\$8000}{25000}$ = 32c/gal. and @ 6 gal./M.C.F. of 540 B.t.u. gas—the cost per M.C.F. is 6 × 32 = $1.92 and we have used $1.90.

[2] This $5.00 per M.C.F. of daily capacity is based on a 6,000 M.C.F. per day diluting and mixing unit. No building included. The cost per M.C.F. of daily capacity would have to be determined by each company.

The problem is to determine whether carburetted water gas or propane-air would be more economical to use for the heating loads on days with more than 46 degree days.

Our peak day would be on a 77 degree-day day and will be equal to the load represented by the degree days above 46 on this day or (77 — 46) equals 31 degree days and we must have equipment capable of supplying this peak load resulting from 31 degree days. The cu.ft. of gas required on peak day[3] = 31 × 30 = 930 cu.ft. The annual load for the days with more than 46 degree-days will be 234 × 30 = 7020 cu.ft.

Now let us see what the overall costs will be for water gas vs. propane. (For the moment we are not concerned with whether from an appliance performance viewpoint we can use the quantity of propane which will be needed on the peak days.)

Our Investment Costs Will Be

Water Gas

$$\frac{930}{1000} \times \$100 = \$93.00$$

Propane

Storage $\frac{7020}{1000} \times \$1.90 = \$13.34$

(NOTE: We have assumed sufficient storage tanks to take care of the entire season without the necessity of obtaining propane during the winter months.)

Diluting equipment, etc. $\frac{930}{1000} \times \$5.00 = \$4.65$

Total Propane Investment $17.99

Interest Charges @ 13%

Water Gas $93. × .13 = $12.09
Propane $17.99 × .13 = $ 2.34

Cost of Gas

Water Gas $\frac{7020}{1000} \times \$0.30 = \$2.106$

Propane $\frac{7020}{1000} \times (6\text{ Gal.} \times 8¢) = \$3.37$[4]

Hence total costs = Water Gas = $12.09 + $2.106 = $14.196
= Propane = $ 2.34 + $3.37 = $ 5.71

Or Costs per M.C.F. of Annual Peak Load Are

Water Gas $\frac{\$14.196}{7.02\text{ M.C.F.}} = \$2.022$

Propane Gas $\frac{\$5.71}{7.02\text{ M.C.F.}} = \$0.813$

Now let us assign letters to these factors and place them in a formula.

Let A = Total overall annual cost
U = Overall cost per M.C.F. of annual load
D = Number of degree days to be provided for on the peak day
D_a = Number of annual degree days corresponding to the peak daily degree days
P = Unit plant cost per M.C.F. of daily manufacturing capacity
S_L = Unit cost per M.C.F. of storage capacity (propane or butane)
g = Factor which is the ratio of $\frac{\text{Storage tanks in gals.}}{\text{Annual use in gals.}}$
C = Consumption per degree-day
F = % Annual fixed charges
G = Gallons of liquid hydrocarbon fuel per M.C.F. of gas
R = Price per gallon
H = Holder cost of the gas
For liquid gas H = GR + labor and maintenance and steam costs per M.C.F.
L = Annual load to daily or $\frac{D_a}{D}$

Investment Costs and Fixed Charges on Same

(1) The daily demand is D × C (or in above was 31 × 30 = 930)

(2) The Plant Investment cost is $\frac{D \times C}{1000} \times P$ (or an example shown for

Water Gas $\left(\frac{31 \times 30}{1000} \times \$100\right)$

(3) The Storage Investment cost is $\left(\frac{D_a \times C \times S_L}{1000}\right) g$ (or an example shown for Propane $\left(\frac{234 \times 30 \times \$1.75}{1000}\right) \times 1$

(g) is equal to 1 as we have assumed storage is equal to the annual use, or total investment is the sum of (2) and (3).

$$\frac{D \times C \times P + D_a \times C \times S_L}{1000}$$

$$\frac{(31 \times 30 \times 5.00 + 234 \times 30 \times 1.90)}{1000}$$

(4) The Finance Charges $F\left(\frac{DCP + DaCS_Lg}{1000}\right)$

or $.13\left(\frac{DCP + DaCS_Lg}{1000}\right)$

The Cost of the Gas Produced:

(5) $\frac{Da \times C \times H}{1000}$ = Annual cost of the gas made, or

$\frac{(234 \times 30 \times .30)}{1000}$ for Water Gas

The overall cost of the gas then is 4 + 5 or

(6) $\frac{F\,(DCP + DaCS_Lg)}{1000} + \frac{DaCH}{1000} =$

A (Total Annual Cost of Peak Load Gas)

We can take out C then we have

(7) $C\ \frac{(F(DP + DaS_Lg) + DaH)}{1000} = A$

The cost (U) per M.C.F. of annual peak load is 7 divided by $\frac{DaC}{1000}$

or

(8) $U = \frac{\frac{C(F(DP + DaS_Lg) + DaH)}{1000}}{\frac{DaC}{1000}}$ and clearing we have

(9) $U = \frac{F(DP + DaS_Lg) + DaH}{Da}$

For purposes of determining the economics of different methods of manufacturing gas for various annual use of the maximum day we can simplify the above formula; for instance, Equation 9 can be written

(10) $UDa = F(DP + DaS_Lg) + DaH$

Now let us divide both sides of the equation in 10 by D—thus

(11) $\frac{UDa}{D} = F\,\frac{(DP + DaS_Lg)}{D} + \frac{DaH}{D}$

[3] Here we have assumed the gas consumption on a peak day will be the same per degree-day as for the season average.

[4] No labor, maintenance or steam costs have been considered as these are difficult to predict for the conditions outlined. They should be included in a final comparison and after a study of the local personnel situation, and steam costs.

(12) or $U = \frac{D}{Da} \frac{(F(P + DaS_Lg) + DaH)}{D}$

(13) Now $\frac{Da}{D} = L$ the ratio of the

Annual Degree Days to the Peak Daily Degree Days and substituting L for $\frac{Da}{D}$

Our formula becomes

(14) $U = \frac{1}{L}(F(P + LS_Lg) + LH)$ or

(15) $U = \frac{FP}{L} + FS_Lg + H$

Thus far we have assumed that the consumption per degree-day on the peak design day would be the same as the consumption per degree-day for the entire season. Should it be desirable to reflect in the formula any differences that might exist in the gas usage per degree-day we can do so by applying a factor "t" to the first part of the equation in No. 15 and our formula then becomes:

(16) $U = \frac{FPt}{L} + FS_Lg + H$

where "t" is the ratio of the annual consumption per degree-day to the consumption per degree-day for the peak designed day.

Since we have introduced the factor "t" in this equation under the next heading where we assign values to the different factors we should add the factor "t" = 1.

Now let's take our previous example and apply in the formula

$L = \frac{234}{31} = 7.55$

F = 13% or .13
P = $100 for Water Gas
P = $5.00 for Propane
S_L = $1.90 for Propane = 0 for Water Gas
g = 1
H = .30 for Water Gas
H = GR = 6 × 8 = .48 for Propane (Exclusive of labor, maintenance and steam costs)

Now substituting the above in our formula we have

Overall Cost per M.C.F. for Water Gas

$U = \frac{.13\ (100)}{7.55} + 0 + .30$

$U = \frac{\$13}{7.55} + .30 = \$1.722 + .30 = \$2.022$ per M.C.F.

It is clear that for given values of F — P and H the determination of the overall costs per M.C.F. for different load factors can be determined by dividing the different values of L into the product of FP and adding to the value of H.

In the above equation the value of FP is $13 which is fixed for the assumed unit plant and finance charge—likewise is the value of H. Hence to determine the overall unit cost per M.C.F. for gas made in a plant which costs $100 per M.C.F. of daily capacity and has a holder cost of $.30 per M.C.F. divide 13 by different values of L and add to .30 or $U = \frac{\$13}{L} + .30$.

Overall Costs per M.C.F. for Propane (Exclusive of labor, maintenance and steam costs)

$U = \frac{.13 \times \$5.00}{7.5} + (.13 \times \$1.90) + .48$

$U = \frac{.65}{7.5} + .247 + .48 = \frac{.65}{7.5} + .71$

$U = .0866 + .727 = \$0.813$

Here our formula for the assumed propane plant and storage investment costs and unit fuel and fixed charges becomes—

$U = \frac{.65}{L} + .71$

It is evident the final formula is much simpler than the original and that once we have determined on certain values for F – P – S_L and H it is a simple matter to determine the overall cost per M.C.F. for peak load gas for varying values of L by merely assigning different values to L and solving for U. Having determined these values we can plot a curve for each kind of gas for the assumed values and from these we can see which kind of gas is the most economical for a given value of L or ratio of annual load to daily peak.

Let us work out the value of U for the following values of L
L = 5 – 10 – 15 – 20 – 25 – 30 – 40 – 50 – 60 – 70 and for the following values for the other components of the equation

F = 13% or .13 for *all gases*
t = 1 for all gases

Water Gas

P = $100 – $150 – $200
H = $ .25 – $ .30 – $ .40

Liquefied Hydro Carbons

P = $5.00 and $40
S_L = $1.75 for propane and $0.88 for butane
g = 1
R = $.05 – $.06 – $.07 – $.08 per gallon
G = 6 gallons per M.C.F. for propane and 5.5 for butane
H = RG – 30 – 36 – 42 – 48¢/M.C.F. of 540 B.t.u.

See Table I and Curve I for the different values of "U" under various assumptions. The cost used herein are illustrative rather than typical. Each company must supply their own cost factors.

Using the above assumptions and the equations we arrive at the overall costs per M.C.F. as shown in Table I.

TABLE I

OVERALL COST PER M.C.F. FOR THE UNIT COSTS SHOW

CARBURETTED WATER GAS: t = 1

Unit Plant Cost	$100			$150			$200		
Holder Cost	25	30	35	25	30	35	25	30	35
L = 5	2.85	2.90	2.95	4.15	4.20	4.25	5.45	5.50	5.55
10	1.55	1.60	1.65	2.20	2.25	2.30	2.85	2.90	2.95
15	1.12	1.17	1.22	1.55	1.60	1.65	1.98	2.03	2.08
20	0.90	0.95	1.00	1.23	1.28	1.33	1.55	1.60	1.65
25	0.77	0.82	0.87	1.03	1.08	1.13	1.29	1.34	1.39
30	0.68	0.73	0.78	0.90	0.95	1.00	1.12	1.17	1.22
40	0.58	0.63	0.68	0.74	0.79	0.84	0.90	0.95	1.00
50	0.51	0.56	0.61	0.64	0.69	0.74	0.77	0.82	0.87
60	0.47	0.52	0.57	0.58	0.63	0.68	0.68	0.73	0.78
70	0.44	0.49	0.54	0.53	0.58	0.63	0.62	0.67	0.72

PROPANE: S_L = $1.75 G = 6 g = 1 t = 1

	Propane-Air				Hydro-Carbon Water Gas Process			
Unit Plant Cost	$5.00				$40.00			
Cost/Gal. Propane	5c	6c	7c	8c	5c	6c	7c	8c
L = 5	.66	.72	.78	.84	1.57	1.63	1.69	1.75
10	.595	.66	.72	.78	1.05	1.11	1.17	1.23
15	.57	.63	.69	.75	0.88	0.94	1.00	1.06
20	.56	.62	.68	.74	0.79	0.85	0.91	0.97
25	.55	.61	.67	.73	0.74	0.80	0.86	0.92
30	.55	.61	.67	.73	0.70	0.76	0.82	0.88
40	.54	.60	.66	.72	0.66	0.72	0.78	0.84
50	.54	.60	.66	.72	0.63	0.69	0.75	0.81
60	.54	.60	.66	.72	0.62	0.68	0.74	0.80
70	.54	.60	.66	.72	0.60	0.66	0.72	0.78

BUTANE: S_L = 0.88/M.C.F. G = 5.5 g = 1 t = 1

Unit Plant Cost	$5.00				$40.00			
Butane Cents/Gal.	5c	6c	7c	8c	5c	6c	7c	8c
L = 5	.52	.57	.63	.68	1.44	1.49	1.55	1.60
10	.45	.50	.57	.62	0.91	0.97	1.02	1.08
15	.43	.49	.54	.69	0.74	0.79	0.85	0.90
20	.42	.48	.53	.58	0.65	0.71	0.76	0.82
25	.42	.47	.53	.58	0.60	0.66	0.71	0.77
30	.41	.47	.52	.57	0.56	0.61	0.67	0.72
35	.41	.46	.52	.57	0.54	0 59	0.65	0.70
40	.41	.46	.52	.57	0.52	0.58	0.63	0.69
45	.41	.46	.51	.56	0.50	0.56	0.61	0.67
50	.40	.46	.51	.56	0.49	0.55	0.60	0.66
60	.40	.46	.51	.56	0.48	0.54	0.59	0.64
70	.40	.45	.51	.56	0.46	0.52	0.57	0.63

Kitchen Ventilation Research

Preliminary findings of A. G. A. Laboratories throw new light on problem of eliminating all excess heat and cooking odors

BY LEON OURUSOFF*
and
R. C. GREGG†

THE present building trend is toward greater numbers of small homes with correspondingly compact kitchens. In keeping with modern gas appliance design and to take full advantage of reduced space, the entire kitchen is being modernized in appearance and utility. To coordinate these trends into a harmonious unit, the Coordinated Gas Kitchen Committee of the American Gas Association has initiated a cooperative program now under way, participated in by gas appliance manufacturers, gas utilities and manufacturers of kitchen cabinets, sinks and other related accessories. These interested groups have united to develop as far as possible the standardization of various kitchen components and to promote the "New Freedom Gas Kitchen" with the ultimate objective of providing American homes with coordinated, comfortable, clean and efficient kitchens.

In addition to the standardization of dimensions and promotional phases of this program, attention is being given to the important feature of kitchen ventilation. The need for advancement in that technique has been intensified by the necessity of keeping abreast with modern concepts of kitchen design requiring something better than the use of unsightly canopy hoods or conventional ventilating fans installed in the wall. Recognizing the need for a scientific study of this problem, the American Gas Association Technical Advisory Subcommittee for Project No. 1, Domestic Gas Cooking Research, recommended to the Association's Committee on Domestic Gas Research that the domestic gas research program be expanded to cover a study of the fundamentals of kitchen ventilation together with the exploration of possibilities for effective and coordinated ventilating assemblies. This recommendation was accepted and approved by the Committee on Domestic Gas Research and the project was assigned to the American Gas Association Testing Laboratories in May, 1944.

Studies to date have entailed removal of excess heat, moisture and cooking odors resulting from operation of the domestic gas range. Other phases of kitchen ventilation as related to removal of grease and to the operation of gas refrigerators have been started recently.

A typical test assembly is shown in Fig. 1. It will be noted that the gas range is placed between two standard-sized kitchen cabinets. The hood located above the range is adjustable in height (for purposes of test) and conforms to the general cabinet design. It is connected to a rectangular duct at the top. In the normal installation, space above the cabinet is unusable because of its height above the floor. In a practical application, the exhaust blower could be incorporated in the cabinet above the range as a unit assembly or placed near the exhaust outlet. As this style of ventilating hood, which for convenience may be designated as the cabinet

Fig. 1. General view of test assembly showing cabinet-type hood with openings (not shown) on bottom of center portion of cabinet structure directly above range

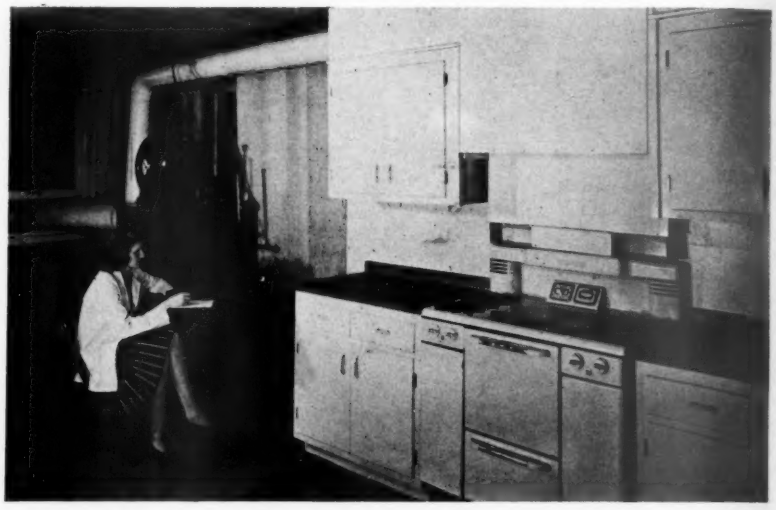


Fig. 2. General view showing wall-type hood with openings directly above back splash

Prepared for presentation at A. G. A. Technical Conference on Domestic Gas Research.
*Member, Technical Advisory Subcommittee Project No. 1, Domestic Gas Cooking Research.
† Assistant Chief Research Engineer, American Gas Association Testing Laboratories.

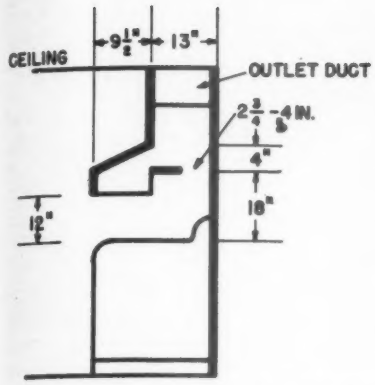


Fig. 3. Essential dimensions of canopy type ventilating hood

type hood, indicated great possibilities from the standpoint of appearance and standardization of assembly, an extensive investigation of its performance under various conditions was conducted. The performance of two other types of ventilating hoods was also studied. These were a modified wall-type hood and a full canopy-type hood shown in Figs. 2 and 3, respectively.

All three types of hoods were connected to a cage-type blower capable of exhausting air at any desired rate up to 900 cfm. Efficiency of heat removal from the kitchen was determined from the quantity of air discharged and the temperature rise in the exhaust duct above the average room temperature.

Heat removal with the cabinet-type hood was studied to determine the effect of height of its inlet above the range top and the area and location of openings comprising the inlet in the front, rear or sides of the bottom of the hood. These openings (not visible in Fig. 1) are located along the bottom of center cabinet structure located directly above the range top. The side openings referred to consist of 6 x 13 in. portions on each side of this hood bottom through which gaseous products resulting from cooking are drawn. Front and rear openings are 4 x 36 in. (entire width of range) located along front and rear edges, respectively, of the bottom of the hood.

Results obtained with 900 cfm air withdrawal rate and at various heights ranging from 18 to 42 in. above the range top are presented in Fig. 4. From these curves it is apparent that height of the hood inlet within the aforementioned limits has no significant effect on the amount of heat removed. Similar studies with other arrangement of openings at sides, front and rear of the bottom of the hood ranging in area from 74 to 462 sq.in. indicated that there is some slight advantage in having

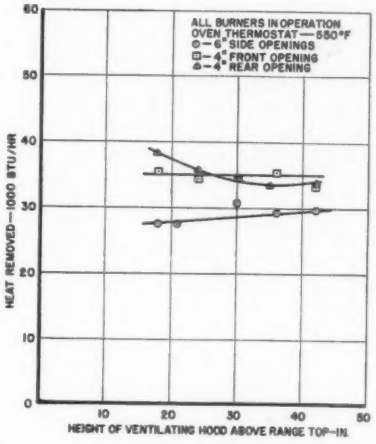


Fig. 4. Effect of height of cabinet-type ventilating hood on heat removal

a large opening. It was likewise indicated that for a divided-top range, better results were obtained with side openings.

The rate of air withdrawal, naturally, is a governing factor in effecting heat removal. Results obtained with side openings and with various rates of air withdrawal are shown in Fig. 5. The upper curve represents the efficiency of heat removal with the two rear burners and oven burner in operation. It will be noted that much less efficient heat removal is obtained when operating the front two top burners and the oven burner than with the oven and rear top burners in use. Also, it is significant that the divergence of these curves is greatest at low rates of air withdrawal. An attempt was made to improve the efficiency of heat removal from the front burners by use of an auxiliary opening 24 in. wide x 2 in. high at the front of the cabinet just below the ceiling level. This expedient, however, did not indicate any immediate advantage in heat removal as shown by the lower curve in Fig. 5.

Wall-type Hood Tested

A similar series of tests were conducted with a wall-type ventilating hood. This is shown in Fig. 2 and consists of a 4 x 36 in. opening located just above the back-splash of the range, connected to the ventilating system through a channel in front of the back wall. Results of heat removal tests with this hood are shown in Fig. 6.

In general, the heat removal curves followed the same trends but with slightly lower values than those obtained with the cabinet hood. In these tests the central portion of the opening was closed to provide two openings directly back of each section of the divided top range. This arrangement, as would be expected, is more effective for this type of construction. Efficiency of removal of heat due to oven operation

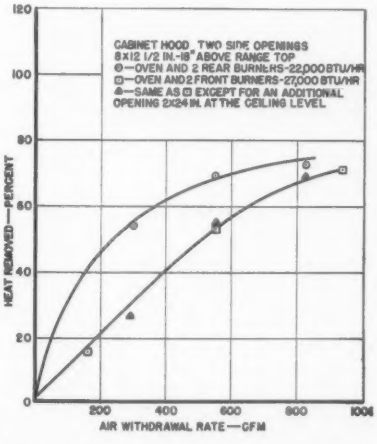


Fig. 5. Effect of rate of air withdrawal on efficiency of heat removal with cabinet-type hood

TABLE 1—COMPARATIVE EFFICIENCIES OF HEAT REMOVAL OBTAINED WITH DIFFERENT ADAPTATIONS OF THE LOWER WALL TYPE HOOD

Type of Hood Opening In.	*Height Above Cooking Top In.*	*Air Withdrawal cfm*	*Burners in Operation*	*% Heat Removed*
2—4 x 9½	10	300	2 front and oven	25.0
" "	10	560	" "	53.0
1—36 x 2	18	296	" "	26.0
" "	18	567	" "	50.0
1—36 x 2	14¾	280	" "	25.3
" "	14¾	580	" "	54.1

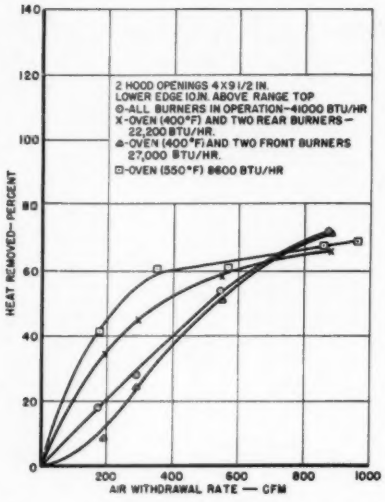

2 HOOD OPENINGS 4 X 9 1/2 IN.
LOWER EDGE 10 IN. ABOVE RANGE TOP
⊙-ALL BURNERS IN OPERATION—41000 BTU/HR
X-OVEN (400°F) AND TWO REAR BURNERS—22,200 BTU/HR.
⊿-OVEN (400°F) AND TWO FRONT BURNERS 27,000 BTU/HR.
⊡-OVEN (550°F) 8600 BTU/HR
HEAT REMOVED—PERCENT
AIR WITHDRAWAL RATE — CFM

Fig. 6. Results of heat removal test with wall-type hood

was found to be high because the oven vents were directly under and adjacent to the ventilating hood openings.

Several modifications of this wall-type hood were made in an effort to obtain more effective heat removal from the front burners. The hood opening was raised to a height of 24 in. above the cooking top and instead of two openings as just described, a single 2 in. slot was extended for the full width of the duct (36 in.). This was found to give practically the same efficiency of heat removal as the original wall-type hood. Results are presented in Table 1 together with those obtained with the same hood equipped with a 6 in. extension of the hood opening toward the front of the range. This extension consisted of a channel 36 in. wide x 2 in. directed downward toward the range top at approximately a 45 degree angle.

The latter type hood also gave almost identical performance to that obtained with the other two. Apparently, the maximum withdrawal of heat from the front burners with this type of hood is about 25 and 50 per cent, respectively, at 300 and 500 cfm for any hood opening extending towards the front not farther than standard cabinet depth (13 in.).

A series of heat removal tests were made with a full canopy hood as shown in Fig. 3, constructed as a visor-like extension to a cabinet-type hood. This particular design was selected for study because it could be made adjustable so that the visor extension could be retracted or even concealed when not in use. With this arrangement the efficiency of heat removal was from 60 to 65 per cent at 300 cfm and from 66 to 71 per cent at 500 cfm, respectively. It was equally effective for front or rear burners. It is doubtful if the efficiency of this hood is sufficiently high to justify its preference to the cabinet-type hood from the standpoint of heat removal from rear top burners or oven burner. Although it did indicate considerable advantage, particularly with front top burners, this same improvement could be effected with the cabinet hood by placing the four top burners in line at the rear of the top section.

Preventing Temperature Rises

In the final analysis the worth of any kitchen ventilating plan largely depends on its effectiveness in preventing an excessive rise in kitchen temperature as a result of cooking operations. This is difficult to determine in a laboratory because conditions in the field are so varied that any one particular test arrangement could be representative at the most of only a few service conditions. Rise in kitchen temperature depends upon many factors including size and location of the kitchen, outside temperature conditions and quantity of heat liberated.

A number of room temperature rise determinations were carried out with different types of ventilating hoods and with both the ovens and top burners in operation. Representative results are presented in Fig. 7 including those obtained with both high and low ceiling. A slightly higher temperature rise was indicated for the low ceiling (8 ft.) compared with the high ceiling (12 ft.) but the difference was not as great as might be expected.

The floor space was somewhat larger (12 x 20) than in an average kitchen and the 8 ft. ceiling extended only 16 ft. instead of the full length of the kitchen. This fact may account for the small difference in temperature rise. It seems reasonable, however, that the use of a ventilating fan would lessen the effect of room size on temperature rise.

In general the results indicate that a fairly low rate of air withdrawal can obviate an excessive rise in room temperature over the average cooking period. A comparison of the two upper curves will give an indication of the advantage gained by use of a kitchen ventilating fan.

Removal of Moisture

Removal of moisture formerly was not looked upon as a factor of major importance in kitchen ventilation, although in warm weather, moisture contributes materially to the rise in "effective temperature." With the advent of home air conditioning and the present trend toward small, well insulated homes, avoidance of excessive moisture in the kitchen and living spaces has become a significant problem in winter and in summer. Experimental data on moisture removal with different designs of ventilating hoods indicated that it is easier to remove excessive moisture than excessive heat.

All moisture produced from boiling water in 9 in. pans above the two rear burners, including that produced by combustion, was removed by each of the three types of hoods at a 300 cfm rate of air withdrawal. The canopy-type hood was equally *(Continued on page 191)*

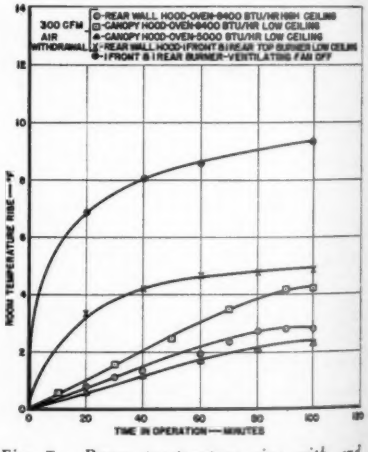

300 CFM AIR WITHDRAWAL
⊙-REAR WALL HOOD-OVEN-9400 BTU/HR HIGH CEILING
⊡-CANOPY HOOD-OVEN-9400 BTU/HR LOW CEILING
⊿-CANOPY HOOD-OVEN-5000 BTU/HR LOW CEILING
X-REAR WALL HOOD-FRONT & REAR TOP BURNER LOW CEILING
⊕-1 FRONT & 1 REAR BURNER-VENTILATING FAN OFF
ROOM TEMPERATURE RISE—°F
TIME IN OPERATION—MINUTES

Fig. 7. Room temperature rise with and without ventilating fan

Cookers

● Thirty-six per cent of the non-owners of pressure cookers intend to buy one when they are available again, according to a survey answered by 1,805 members of the American Home reader-consumer panel made in December. Forty-two per cent do not know if they will buy a pressure saucepan, and 19 per cent state they will not buy one.

Pressure cookers are owned by 25 per cent of the panel members, pressure saucepans by 8 per cent. More than three-fourths of present owners of pressure saucepans consider them "excellent."

25 Years of Insurance Progress

Activities of the American Gas Association's Insurance Committee have saved the gas industry thousands of dollars and brought other noteworthy results

BY J. G. REESE

Supervisor, Insurance, Consolidated Gas Electric Light and Power Co. of Baltimore

J. G. Reese

ON November 17, 1920, a paper entitled, "Fire Insurance from the Public Utility Viewpoint," was presented by J. G. Reese of Baltimore before the Accounting Session of the American Gas Association. Following a discussion of the paper, the chairman asked: "Can we make any definite suggestions from this discussion to help the incoming administration?" J. W. Heins, Philadelphia, made the following motion: "I move that a committee be appointed by the incoming administration to gather statistics and study all the ramifications of this subject." The motion was seconded and carried.

Birth of Insurance Committee

Thus the Insurance Committee was started. In December 1920, W. H. Pettes, the new chairman of the Accounting Section, began seeking a chairman of the new committee. Finally E. C. Scobell of the Rochester Gas and Electric Corporation accepted the position for the term of 1920-1921. In addition to Mr. Scobell, the first committee consisted of the following members: Harry Anderson, Chicago; J. P. Crowley, St. Paul, Minn.; H. M. Eaton, Detroit, Mich.; W. E. Haughton, Los Angeles, Cal.; J. E. McLeod, St. Louis, Mo.; A. F. Mueller, Seattle, Wash.; J. G. Reese, Baltimore; A. F. Short, Providence, R. I.; K. L. Simons, El Paso, Texas; E. C. Stothart, Charleston, S. C.; P. A. Wilson, Philadelphia, Pa.

At the A. G. A. Convention in Chicago, November 9, 1921, Mr. Scobell made the initial report of the Insurance Committee. He defined the scope of the committee's work as follows:

"To gather statistics from the gas companies of the United States as to fire losses sustained by them over an extended period of years, and its relation to the amount of insurance premiums paid; to ascertain the character of the protection now carried and any other information which, when compiled for the whole industry, will enable any company member to submit such figures to their local Underwriters as a logical basis for a substantial reduction in present fire insurance rates."

It was reported that during a five-year period, insurance in the amount of $378,579,397, at a premium of $1,198,641.12, had been written. The average rate was 31.7¢ per $100. Insurance recoveries during the same period amounted to $496,043, a ratio of loss to premium of 41.38%.

The committee was continued during 1921-1922, under the chairmanship of P. A. Wilson, who continued the collection of data started by Mr. Scobell. Apparently there was not sufficient information available, as no report was made to the Convention.

I. M. Carpenter

From 1922 to 1926, J. G. Reese, Baltimore, served as chairman. Committee members during that period were, Anderson, Chicago; Bourne, New York; Daniels, Boston; Metzel, Philadelphia; Scobell, Rochester; Scott, Chicago; Hall, Boston; Kendall, Michigan; Clinton, Worcester; Harriman, South Carolina; Hibb, Philadelphia. With the advent of such experienced insurance buyers as Scott, Bourne, Metzel and Kendall, a broader viewpoint prevailed, and the scope of the work extended far beyond the original plan. All classes of insurance were studied and closer contacts with Rating Bureaus and Insurance Companies resulted. The buyer and the seller obtained a clearer insight into each other's problems, and a more friendly attitude followed. It was noted that the insurance companies were willing to discuss freely whatever proposals the industry might offer, and when the point was proved, cooperation in effecting rate reductions, or improving policy terms or conditions, was freely given.

As a result of this new relationship, beneficial results were obtained by the gas industry as recorded in reports of the committee. A few of the highlights were:

Although the committee had been in existence a very short time, the chairman was able to report to the 1923 Convention at Atlantic City, that, with

INSURANCE COMMITTEE 1944-1945

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Consolidated Gas Elec. Lt. & Pr. Co., Baltimore, Md.
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Boston Consolidated Gas Company, Boston, Mass.
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L. R. STEWART
Jersey Central Power & Light Co., Asbury Park, N. J.

only a small number of companies reporting, the reduction in fire insurance rates amounted to $15,000. Also that the rate reduction had been adopted generally throughout the various rating jurisdictions. Another valuable effort had been the obtaining of the Inherent Explosion Clause, which, when endorsed on fire policies covering gas properties, provided that damage resulting from explosion caused by ignition of gas, without ensuing fire, would be considered as fire damage. This was an addition without cost that saved the industry many dollars.

In 1924, at Atlantic City, the committee reported that a reduction of 36% had been obtained in rates on Public Liability Insurance for the industry, and the rate for fire insurance on gas holders had been reduced to a new low figure of 10c per $100; also that the uniform explosion clause had been adopted throughout the country by rating organizations.

H. C. Davidson, the chairman-elect of the Accounting Section, in reply to an inquiry as to the continuation of the committee, said: "There is no doubt or hesitation as to the continuation of this committee after the results of this last year of which we can all be proud. It means actual dollars to most companies."

The report of the committee at the 1925 Convention was of a routine nature, stating that the activities for the year were devoted chiefly to the following items:

(a) Further adoption and application of the new rating schedule and the Explosion Clause.

(b) Preparation of standard forms to be attached to fire policies.

(c) Aiding member companies to obtain reductions in Public Liability Insurance.

(d) A study of Group Life Insurance.

(e) Preparation of an Insurance Primer.

The committee was requested to prepare a five-year review as part of its report to the Convention at Atlantic City in 1926.

Rate Reduction

Among many activities of benefit to the industry, the committee mentioned a rate reduction in fire insurance premiums, which produced a saving of over $200,000 a year. In 1922, the rate was 47¢ per $100, and in 1925, it was 27.7¢, a reduction of 19.3¢.

Rates on Public Liability had decreased and had produced savings of from $75,000 to $100,000 annually. The explosion clause had been adopted generally.

At this convention, the late Louis Harding, manager of the Central Traction and Lighting Bureau, was introduced to the assemblage, and made a few remarks. He bore witness to the good relations then existing between the two organizations.

At Chicago, in 1927, A. J. Metzel, Philadelphia, made a very constructive and comprehensive report, as chairman of the committee. Rates on gas properties, and an explanation of their application were given much space, showing effective work and results.

In 1928, at Atlantic City, Harry Anderson, of Chicago, as chairman, had an extensive report covering such activities as the joint effort of this committee and the Insurance Committee of the National Electric Light Association in in the publication of "Fire Insurance for Gas and Electric Utilities," a work which covers the subject from the application to the adjustment of a loss. This was the first attempt at joint endeavors of the two utility insurance committees, and from it grew the present-day practice of uniting for more beneficial results.

R. T. Kendall, Jackson, Michigan, as chairman during the period from 1928 to 1930, devoted much time to the joint work of the utility committees in preparation of a manual of Insurance for Gas and Electric Companies, which dealt largely with casualty insurance. During that time a reduction in rates for fidelity bonds and a further reduction of 15% in fire rates, were obtained. Another important activity was the revision of the fire schedule for gas properties.

At the 1931 Convention in Atlantic City, T. H. Prendergast reported that the new gas schedule produced a reduction of 17% instead of the 15% previously reported and that many thousands of dollars had been saved. It was at this time that the chairman made his "fighting" speech advocating separation from the Accounting Section, and recogni-

tion as a special committee. In this connection the chairman of the Accounting Section said: "The Insurance Committee is one of the few committees that can point to its work and the results of its work in dollars and cents. So when you say you will pester us, it only bespeaks the fighting attitude that has gotten the Insurance Committee as far as it has gone today."

F. A. McKenry, Philadelphia, at the 1933 Convention in Chicago, as chairman, reported that in the spring of 1932, the Executive Board, American Gas Association, had designated the Insurance Committee as a general committee.

J. L. Llewellyn, of Brooklyn, served as chairman for two terms, from 1933 to 1935, and during his tenure of office,

studies were made of Pensions and Group Life Insurance, and Bonding.

From 1935 to 1937, Harry Anderson again served two terms as chairman, and then Joe Llewellyn became chairman for the period of 1937-1938, followed by Rex Fleming for one year, after which F. H. Deckman of Columbus served

for the term 1939-1940. It was at this time, the committee returned to the Accounting Section of the American Gas Association to remain there during the period from 1940 to 1943.

Rex Fleming set forth very strongly in his report of the activities of the Committee for 1941-1942, the arguments against participation of the Insurance Committee as part of the Accounting Section, when he said in part, "The principal work of the Insurance Committee has to do with insurance companies, insurance rating organizations and others which are not connected with the gas industry, and because insurance is somewhat foreign to accounting, it has made no direct contributions to the general program of the Accounting Section meeting. It has operated as a more or less independent entity."

During this period from 1940 to 1942 under the chairmanship of Mr. Fleming, joint activities with the Insurance Committee, Edison Electric Institute, were carried on, particularly in connection with War Damage Insurance, and the endeavor of the two committees was successful in providing a very substantial reduction in premium on fire resistive properties, amounting to 33⅓%. Also, the committee conducted negotiations which resulted in reductions in fire insurance rates on several classes of natural gas properties.

The efforts to become once more a general committee, instead of a committee of the Accounting Section, were successful, and the new chairman for 1942-1943, I. M. Carpenter, New York, received his appointment under the new regime, and is continuing his activities at the present time. One of his principal aims is a reduction in rates under the fire insurance schedule for gas properties, and it is confidently expected that success will crown his efforts.

Revision of Fire Prevention Data

Another project of Mr. Carpenter is a much desired revision of the joint report of the Central Traction and Lighting Bureau and the Insurance Committees of the American Gas Association, Edison Electric Institute, and American Transit Association on "Fire Prevention and Fire Protection," published in 1933. There has been considerable advancement since that time in fire protection and prevention, and it is desired to make this known to utility management. This will be a "first" on the postwar program of the committee.

During this quarter of a century, the Insurance Committee has produced results that have saved the gas industry many thousands of dollars. Without the fine cooperation and the spirit of friendliness and understanding of the insurance companies and their rating bureaus, much that has been accomplished could not have been achieved. Due recognition of this splendid relationship between the two organizations is freely acknowledged, and tributes of appreciation are rendered them gratefully.

There will always be work for this committee, in order to meet the changing needs of the industry, and to inform members of new forms of insurance, or to obtain better rates when conditions warrant.

Gas Fire Insurance Rates Reduced

AFTER two years' patient and persistent work, the A. G. A. Insurance Committee under the leadership of the Chairman, I. M. Carpenter of Ebasco Services, Inc., has secured revision of the schedules of the Central Traction and Lighting Bureau which will produce a reduction of 5% in final rate on certain risks.

The reduction applies to coal, water and oil gas plants and to natural gas plants. After the average fire rate of these properties has been obtained a credit of 5% may be deducted in the actual charge for the insurance.

These reductions recommended by the Central Traction and Lighting Bureau will become effective when adopted by the regional rating organization having immediate jurisdiction. It is understood that such adoption will not be undertaken by any rating organization prior to April 9 when gas companies may take the matter up with the member organizations of the Central Traction and Lighting Bureau.

Personnel Group Meets in Kansas City

THE American Gas Association-Midwest Personnel Conference, of which R. B. Harkins, personnel director of the Panhandle Eastern Pipe Line Company is chairman, held its third meeting in Kansas City, Missouri, March 8. This meeting was attended by Kurwin R. Boyes, secretary of the American Gas Association, and twenty-three other delegates representing seventeen different gas companies from the five midwestern states included in this conference.

Mr. Boyes outlined how the Association is now handling industrial relations for the gas industry and what the plans are for the immediate future. He also distributed an A. G. A. report on "Manpower Saving Measures and Devices" and talked briefly on the subject.

A report from the Job Analysis Committee was presented by C. C. Jolley of the Natural Gas Pipeline Company of America, chairman of the committee. The other committee members are: D. E. Sedgwich of the Kansas Power & Light Company, and H. F. Voertman of the Laclede Gas Light Company. The conference accepted the report, which is published in this issue of the MONTHLY, in its entirety.

T. M. Campbell, member of the Industry Advisory Council of the Seventh Regional War Labor Board, gave an interesting and informative talk on the functions of that agency.

The next meeting of this conference will be held some time early next May.

Gas Heating Tomorrow

Flexibility of gas coupled with new designs of furnaces and imaginative engineering make ideal postwar home combination

BY H. P. MOREHOUSE

Vice-Chairman, Subcommittee on Housing, American Gas Association

This article was originally prepared for consumer magazines, architectural & building and other trade journals, and has been distributed to those publications. It is designed to stimulate interest in gas heating for postwar homes. Because of the unusual treatment of the subject, it is of special interest to gas men everywhere.

WHERE will the furnace in tomorrow's one-story house be located?

If it is a gas furnace, it may be located almost anywhere in the house. The fuel form of gas makes it possible to utilize unusual locations for heating equipment. Many of these equipment locations would be impractical with any other fuel. This flexibility of gas, coupled with new designs of furnaces and imaginative engineering, will show savings in space and in costs, as indicated in the following compilation of gas heating units for postwar homes.

Heating units can be up, can be down, can be placed under the floors, over the floors, between walls, in the attic. They can also eliminate the traditional masonry chimney, with substantial savings in building costs.

This has important implications for the postwar building market which has its eye on several million service men who want homes, but whose limited funds may confine them to the basementless house.

1-Story House Without Basement

There are at least nine possible out-of-the-way, space-saving locations in the one-story house without basement where gas heating equipment may be placed. Figure 1 shows these locations and the following numbered paragraphs correspond with the circled numbers on the drawing:

1. *Attic Unit.* A horizontal forced warm air unit designed to rest on the attic floor or joists. The heat is distributed downward into a plenum chamber formed in the top of a central hall closet; the warm air thence is distributed to the rooms, either through registers in the plenum, or through a duct system to each room.

2. *Tall-Type Closet Unit.* This is a narrow vertical unit, one model of which has outside floor dimensions of 19 x 28 inches and takes up a minimum of floor space. It can be installed successfully in a very small closet. It might be termed a hi-boy model.

3. *Low-Type Closet Unit.* A new low-boy type has been designed to fit into the bottom of a small closet, leaving usable space above for shelves. Warm air

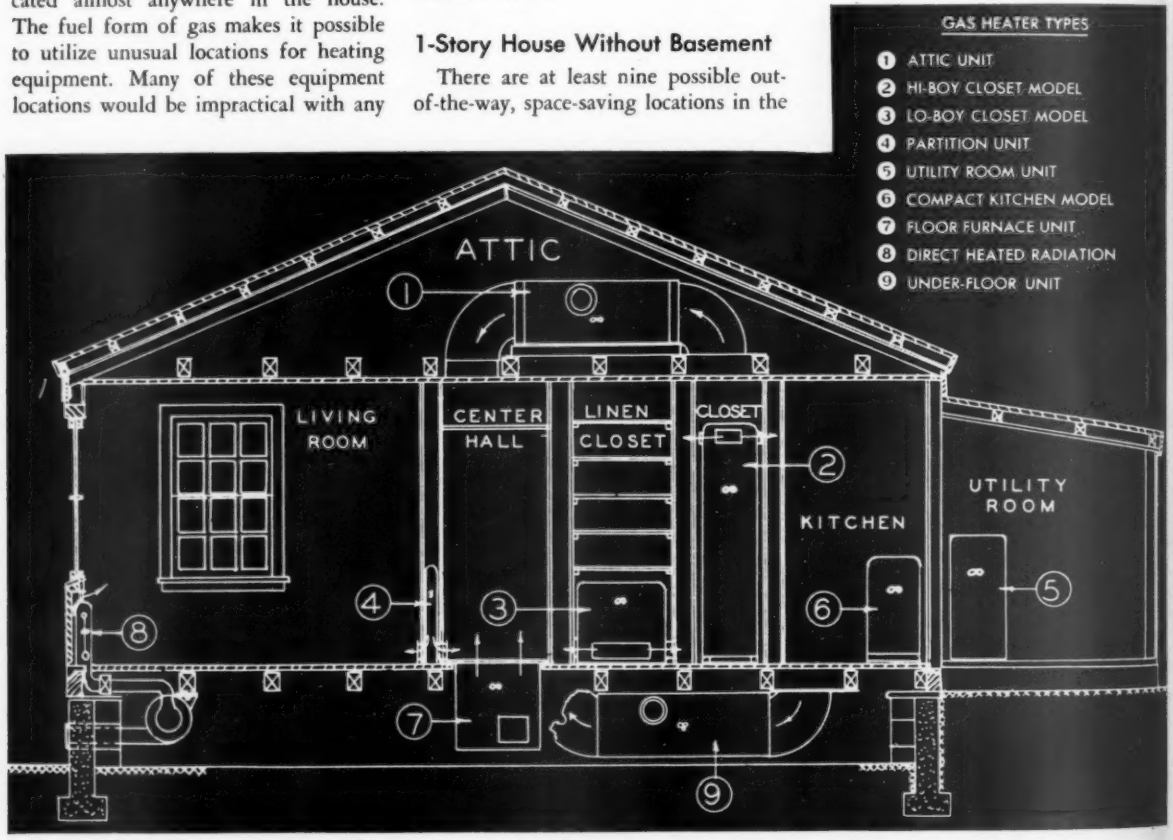


Fig. 1. Gas heat in the one-story house. Nine possible out-of-the-way space-saving locations for equipment are shown

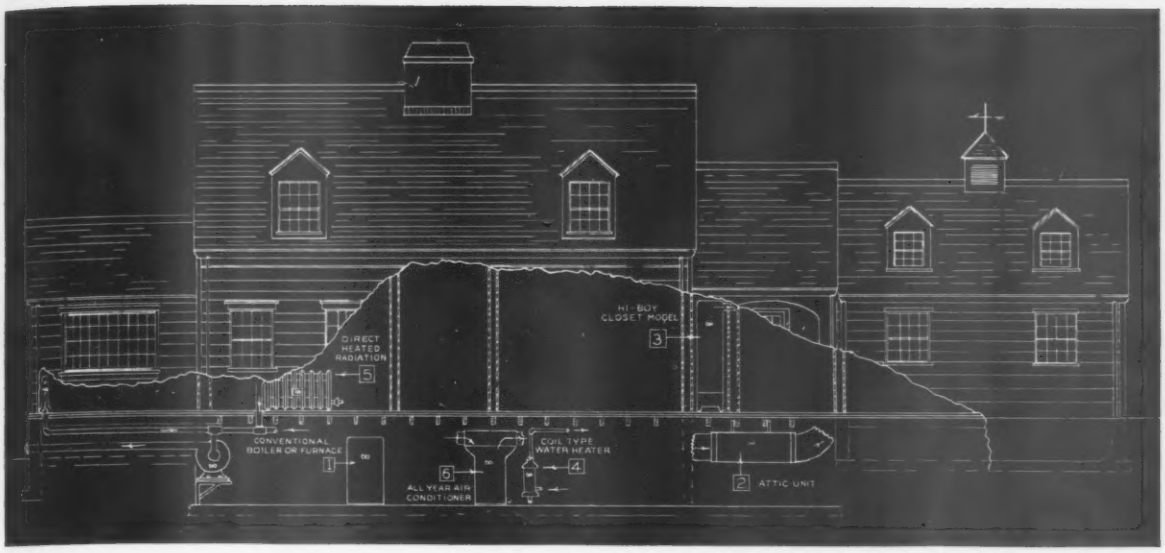


Fig. 2. Gas heat in the two-story house. Note flexibility of equipment and all-year air conditioner

is delivered downward through registers at the baseboard, a fact which helps to solve the problem of cold floors in the basementless house.

4. *Partition Unit.* A new narrow unit for installation within a partition wall is promised for the postwar period by one manufacturer. Separate units will supply heat to each room, with individual room control.

5. *Utility Room Furnace.* The conventional compact unit designed to furnish heat, either through a central duct system, or through radiators utilizing steam or hot water radiation. Lilliputian units of this design will be available after the war. Manufacturers will reduce furnace dimensions by utilizing unusual heat transfer surfaces.

6. *The Kitchen Unit.* This installation may be used in either of two ways: (a) as a gas-fueled winter air conditioning system or (b) as a small gas boiler connected either to conventional radiation or floor piping for panel or radiant heating. Installations of the latter type already are in operation. Many appliance manufacturers have units suitable for this purpose.

7. *Floor Furnace.* A descendant of the pipeless furnace. Since a floor grill is used, no space above the floor is required for the unit; and only a small subcellar is needed to house it and allow sufficient space to install and service it. Such units have been used extensively for many years in the South, Southwest and on the West Coast.

8. *Gas Radiators,* individually heated and suction vented, offer a new system which was used to a limited extent before the war. One exhauster, connected to all radiators, disposes of the products of combustion. Individual automatic temperature control for each room is available through this system, and it thus offers an effective zone control where desired for the small house.

9. *Under-floor Unit.* The "Attic" Unit, mentioned in Example 1, can also be suspended from the joists under the first floor and be connected to a duct system supplying warm air to all rooms above—assuming the house construction allows sufficient sub-cellar space for installation and servicing the unit.

One-Story House With Basement

10. *Basement Unit* (not shown in Figure 1). In addition to the above installations, there is, of course, the conventional boiler or furnace designed to be placed on the basement floor and which might connect to any of the following systems:

a. steam radiation
b. hot water radiation
c. gravity warm air duct system
d. winter air conditioning system

Units of this kind are manufactured by numerous appliance manufacturers.

Two-Story House

The need for space-saving in the two-story house with a basement is not as acute as it is in the basementless one-story house, but here again the flexibility of gas offers important advantages.

The great majority of such houses can be heated satisfactorily by the conventional central heating system, using a winter air conditioner or a gas boiler, as is shown at (1) in Figure 2. Of course, such a basement installation for an average two-story house may be any of these systems.

a. steam
b. vapor
c. hot water
conventional radiation
radiant heating

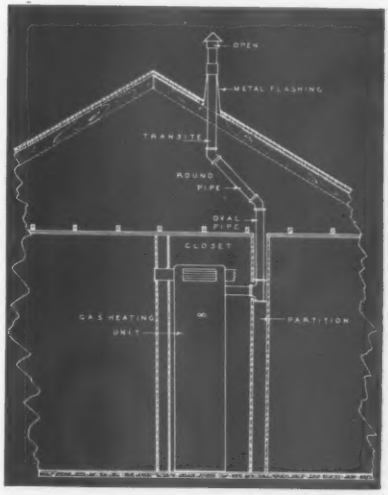


Fig. 3. An application of the Type "B" flue which is approved for gas fuel only

d. gravity warm air
e. winter air conditioning
f. all year air conditioning

The unit shown at (6) in Figure 2, utilizes essentially the same gas equipment the *year 'round;* it heats, humidifies, filters, ventilates and circulates air in winter. It cools, removes humidity, filters, ventilates and circulates air in summer. Thus, the indoor climate all year is under the control of the home owner simply by throwing a tiny electric switch on the thermostat.

Rambling Type House

Occasionally there are some knotty heating problems with the rambling two-story or multi-story house. Often it is hard to heat uniformly unless two units, placed in different basement locations, are employed. Figure 2 indicates how these problems may be solved without using two full-sized units when gas is the fuel. The circled numbers on this drawing correspond with the following numbered paragraphs:

1. *To heat a wing* far separated from the main heating unit, a simple solution might be to employ the "Attic" type of unit (2) or a closet model (3) shown in Figure 2. It would not be necessary to have a fully excavated basement under the entire house in this case.

2. *Maid's apartment.* The owner may wish winter air conditioning for his living quarters and separate heating arrangements for those used by an employee. If the latter's quarters are small, as a room and bath, they may be heated by radiation connected to a conventional-type coil water heater (4), Figure 2, which is used exclusively for heating purposes. It could be controlled by a thermostat in the employee's quarters. This same arrangement may be applied also to any seldom used portion of a house. The stand-by losses from such a heater will be small because there is not much equipment mass to cool when the thermostat shuts off.

3. *Rooms over a Garage.* Since rooms over a garage often cool off faster than other enclosures, it is sometimes desirable to heat them with a separate unit. The units illustrated at (2) and (4), Figure 2, will solve this problem by supplying zone control.

4. *Individual room temperature control.* Where this is desired, gas radiators with a mechanical exhauster (5) Figure 2—are available. Each radiator can be under control of a room thermostat if desired. No chimney is required for this type of heating unit; the flue products are exhausted under forced draft of the foundation line. This system offers a form of zone control.

Fuel Form of Gas Allows Unusual Flue Arrangments

A Special flue for burning gas—known as the Type B Flue—has been approved by the Fire Underwriters. An application of this flue is shown in Figure 3.

With this type of flue it is not necessary to construct a brick chimney and this, in many cases, may result in considerable savings in cost of construction.

Gas heaters have a relatively low flue temperature; the surface temperature of the equipment also is lower than with other fuels—both of which mean reduced fire hazard and less required clearances. That is one reason why unusual locations with these specially designed gas heating units are permissible.

Of the nine applications of gas heating for the one-story house without basement indicated in Figure 1, none requires a Type B Flue although it can be used for all. Anyone building a new house and wishing to eliminate a chimney may use this type of flue instead of a brick chimney if it is desired.

It is advisable to consult with your local gas company to make sure the installation is in conformance with all codes.

Single Point Ignition Now a Reality

A LIMITED number of gas ranges that are equipped with "single point ignition" has been delivered and some sold in the Philadelphia area, according to an article in the January *Philadelphia Gas Works News.* Quoting George W. Schock, general supervisor of domestic appliance sales, it credits the A. G. A. Laboratories, valve control manufacturers, the P.G.W. laboratory and the cooperation of a range manufacturer for making this development possible. John Bennett, Clarence Winterstein and Nelson Wunder, of the Philadelphia company, are named as doing excellent work on the local laboratory.

After explaining what the term means, the article continues:

"The first sale of one of these ranges was made on December 22nd by our Elizabeth Van Amburgh at the Germantown sales office, and the purchase was made by Mrs. James C. Kinsley for her home on Fernhill Road.

"Our company is proud of its part in projecting this development, and in rallying the resources of the industry to its efforts in refining and improving this idea to its present form of acceptance for use by our customers. Through its use, P. G. W. will be able to wholeheartedly join hands in the national promotion of "C.P." ranges, where the automatic lighting of ovens and broilers is a qualification, but where in the past, when gas ignition was used, this feature necessitated the use of two or more pilots on the range.

"In Collier's for December 30, 1944, under the heading, 'Your Life Tomorrow,' it is predicted, 'Light Your Oven with a Pilot'

" 'Tomorrow's gas-stove ovens and broilers will not have to be lighted with matches. Appliance experts have discovered how to construct a tube leading down from the regular top pilot to carry the flame down to the lower burners and save the housewife the annoyance of kneeling to ignite the raw gas with a match.'

"We can say that Collier's prediction is now an actuality in Philadelphia."

Sales Expert Gives Gas Cooking Pointers

GAS-FIRED hotel and restaurant cooking equipment has lately come in for publicity dividends through the crusading efforts of Elmer Wheeler, who taught the restaurant trade to "sell the sizzle, not the steak."

This national authority on retail selling is touring the country with his famous talk, "Take an Hour to Say No." On his recent visit to Washington, A. G. A. Vice-President Everett J. Boothby had him address the entire employee group of the Washington Gas Light Company.

While in the Nation's Capital, Wheeler demonstrated the technique of putting the sizzle into the steak at the Washington Statler, aided and abetted by Chef Otto Gregorich and Matt Meyer, President of Washington's enterprising Advertising Club.

Elmer Wheeler (center) and aids demonstrating how gas puts the sizzle in the steak

The Gas Industry Keeps Pace

As one of the nation's prime energy resources, gas fuel and its derivatives have established an impressive record of public acceptance over many years

BY C. GEORGE SEGELER

Utilization Engineer, American Gas Association

As a featured luncheon speaker before the New York Society of Security Analysts, February 23, Mr. Segeler presented this interesting review of the economics and postwar prospects of the gas industry. While some of the material may be an old story to MONTHLY readers, parts of it are new and might well serve as source material for talks by gas company executives before local civic and business organizations.

IN popular thinking it is always a source of surprise that blimps and other gas-filled balloons do not burst apart with a loud bang when their light fabric is shot through by an enemy bullet. Nor do they promptly fall to earth just because there is a bullet hole or two through their gas bags.

And so it is with the gas business. A few competitive shots are not likely to sink the ship nor burst it apart like a South Sea bubble.

The story of the gas industry in the United States is a notable record of more than 100 years of public service. The history of the loss of the lighting load to electricity is well known to everyone but the fact that this touched off the real period of growth for our industry is in my opinion the meat of the situation. This growth has continued and accelerated as new markets for gas were developed. The war needs obviously expanded the industrial and commercial markets for gas and at the same time the war changes in living conditions have increased domestic uses at a marked rate. A detailed analysis of these trends and the competitive factors involved should be helpful in evaluating the future picture for the gas industry.

Complex Industry

The gas industry like Caesar's Gaul is divided into three parts: manufactured, natural and liquefied petroleum gas. Or if we count mixed manufactured and natural gas as a separate division we have four parts each of which has decidedly different economy and engineering background although many activities and problems are faced common. On the other hand, these four divisions sell gases which themselves are quite different. They are of different chemical composition. They are somewhat different in their burning characteristics and they are often quite different in price. This, in turn, leads to sales and competitive situations which are radically different. Let's examine some of these differences and see how they may influence the future of the gas business.

Generalizations about the gas industry need to be tempered by a self-evident but mighty important factor, namely that the individual gas operations in each major community are large enough in themselves to require independent appraisal based on the specific local conditions. This is true, I believe, even where holding companies or service companies lend their assistance to the making of policy and the operation of an individual gas company.

What this means is, the generalizations based on overall gas statistics fail to give due weight to the benefits which stem from efficient management. Of course, this is just as true in any other as the gas business but I comment upon it because it may have been disregarded in certain statements which I have seen in print regarding our business. It is no news to you, for example, that there is a feeling that natural gas is more profitable than manufactured gas and on an overall statistical basis this may be partially true. Reappraisal of the possibilities in all branches of the industry in terms of the successful companies clearly shows that there need be no marked difference in performance under favorable conditions of management and operation.

But to return to our discussion of markets for gas. Natural gas reaches about 8 million families and about 600,000 commercial and industrial establishments. Manufactured and mixed gas is served to somewhat more than 10 million families and about 475,000 industrial and commercial accounts. Thus, in very broad terms, the United States is about equally served with these gases but the geographical distribution is somewhat localized. Manufactured gas is principally distributed in the New England states and along the Atlantic seaboard and in some of the northwestern states. Natural gas is available in thirty-five of our 48 states and extensions have continued even through the war years. The mixed gas cities are growing in number and already include such important centers as Washington, St. Louis, Chicago and surrounding territory, Minneapolis, Binghamton and Syracuse. Liquefied petroleum gas service in suburban and rural areas reaches more than 2,000,000 families.

Geographical Variations

The prices at which natural gas is sold are definitely lower than the prices for manufactured gas and in general the same service costs half or even less than half as much. To illustrate the point one might compare, let us say, Cleveland with Boston. The former enjoys natural gas and the latter has manufactured gas. The cost of furnishing these two services is influenced by factors which are not comparable in any way. Pipe line costs can not be related to the cost of shipping coal and oil. Labor and investment requirements are totally different. Even the fixed charges on gas mains are different on account of the use of a gas of 1100 B.t.u./cu.ft. in Cleveland and 530 B.t.u./cu.ft. in Boston. But, looking at retail gas prices, we find the cost of cooking, water heating and house heating for a typical house in Boston might be $27 in a given month whereas in Cleveland this would be $13.

Such prices plainly do not tell the whole story because it is not merely the price of gas that must be considered but the cost of competitive fuels as well.

We would expect to find, for example, that the average home in Boston would use anthracite coal or oil, for house heating, both of which are high-priced fuels. In Cleveland, on the other hand, the use of cheap bituminous coal is widespread and thus there is keen competition for gas in both places although its nature and extent are different.

The war experiences with rationed fuels and with fuel shortages have led to an unprecedented demand for gas service. Every gas company that has been in contact with us has indicated this rising demand. The gas industry is fully aware of the tremendous sales opportunities that this demand poses for the future and the problems that lie ahead. It is now no secret that the manufactured gas industry has started an expanded research program specifically directed at the development of methods for making gas at low investment cost to meet the future needs for house heating. The technical aspects of this research work are promising.

Swing to Gas Heating

The swing to gas for house heating introduces two obvious problems for the gas industry. They are caused by the extreme peak loads of short duration which are occasioned by severe cold weather spells. The first problem is the maximum daily demand for gas over the period of the cold spell, this demand being universal from all occupied homes. It can be computed with considerable accuracy from housing data. It must be met by a combination of gas manufacturing capacity and storage capacity or, in the case of a natural gas system, it must be met with pipe line delivery capacity and storage capacity.

The second problem is the effect of house heating upon the gas distribution system because gas mains must be adequate to handle the required hourly flow to all parts of the system. Due perhaps to careful planning for future growth, the problem of adequate mains has not thus far proved to be difficult. Certain portions of a given system may require reinforcement but this can generally be done without extensive expenditure.

The other problem, that of the maximum daily capacity, introduces no difficulty as long as the existing plant is big enough to cope with the situation. It is anticipated, however, that the rapid increase in the use of gas in the future will lead eventually to the point where additional production facilities will be required. Since these facilities are only needed for a limited time it is apparent that managements of gas companies must be primarily concerned with investment costs rather than with the cost of producing the gas to meet the peak load.

A survey just completed for the New England States shows that, for an expenditure of about 1/3 to ½ of the unit investment cost required for new plants, existing production facilities may be markedly expanded by elimination of present bottle-necks. Experiments with the use of propane-air systems show that these may offer another low cost method of extending peak period production capacity when this becomes necessary.

Public's Memory Short

You may well ask, what about the future of coal stokers and oil burners for heating homes as compared to gas? Because the public has a short memory they may soon forget war-born fuel shortages. Prior to the war, surveys were conducted annually to determine the fuels which went into new houses constructed within reach of gas mains. These surveys clearly showed that gas heating would soon dominate the new home market.

Many reasons contributed to this fact. For example, the use of insulation and weather stripping and the small compact design of newer houses has reduced overall heating costs. The public demand for truly automatic heat made oil or gas the logical choice for new houses but the figures showed that gas was preferred. While it is true that in some localities the actual cost of gas might be higher than that of coal or even oil, nevertheless the total fuel bill with gas was well within the anticipated budget for home heating. If it costs $100 to heat a house with gas and costs a little less to heat it with oil that differential may not represent a sufficiently large amount of money to exercise a determining influence on the buyer.

I don't think it is necessary to pursue this further because the facts speak for themselves. However, it is necessary to visualize the influence which this trend to home heating by gas has upon the future trends. It has been aptly stated by leaders in the gas industry that gas house heating spearheads the use of gas in the home. Gas companies generally have found that it is easiest to sell a prospective customer an all-gas house, that is, gas for heating, cooking, water heating, refrigeration, laundry service and incineration, when gas is used for central heating.

There has been much talk about domestic electric competition in the postwar era. The idea seems to be that the electric industry has expanded its production facilities to meet war loads and that when these drop off there will be large amounts of idle equipment encouraging the sale of electricity at any price in order to make use of it. Field surveys show that cooking electrically will take 125 kwh. per month and electric water heating about 400 kwh. per month. These quantities applied to any large number of electric customers would cause a tremendous expansion in power sales. These figures are reasonably correct but the conclusion that there will be a large swing to the use of electricity for these purposes appear to me to be wholly in error. Let us examine the record.

Electrical appliances for cooking and water heating have been on the market

Peak Loads

● Frankly, I have no slight sympathy for the electric folk in their troubles during this cold spell. They should have known—I have been telling them for years—that radiators and small cookers were the very devil for their sort of production. But so infatuated were they with the idea of an all-electric world that they just forged ahead regardless of facts. Now—and this is no novelty—they are reaping the whirlwind. And the buck is being passed to the consumer!

Admitted, gas is having a tough time too, but it does not have to get its dispatchers to cut off big slabs of load completely. It can give a reduced service; but the other fellow has to cut out whole sections. I am not crowing over the failures of our electric competitors; I am just telling them that had they not buried their heads in the sand they would have seen it coming. I am not in the least concerned with the competition of electricity with gas; gas properly handled can hold its own—at least so I think. But, I do not see why the crazy policy of taking on everything electric, regardless of true economy, should get away with it.—Editorial in London *Gas Times*, February 3, 1945.

for decades. Speakers before the gas convention in 1924 even then viewed with alarm the advertising and promotional activities of the giant electric equipment producers. Tremendous sums have been spent ever since in the advertising and promotion of these services. But the actual inroads even against the least favorably situated gas companies have not been serious. Against the more favorable situations, manufactured and natural gas companies alike, electrical range and water heating competition has been of no great practical significance. In part this is due to public acceptance of gas; in part to the high cost of electric services.

The public recognizes that gas equipment performs all of the functions under discussion as well or better than electricity and does so with less investment, less service problems, and at lower monthly cost. The United States census of 1940 included detailed studies of fuels used for cooking and presented a true picture of where the electric ranges have been sold. The total sales may be less than many may have thought and they have principally been in areas not served with gas. You may well ask whether this will continue in the future. Frankly, I do not know, but I see no change in the factors which have controlled the situation in the past.

Domestic Gas Research

Furthermore, the research developments led by the splendid program of the Domestic Research Committee of the American Gas Association promise a level of convenience and performance for domestic gas appliances of the postwar era that will put present units completely to shame.

Another point which should not be overlooked is the impressive record of public acceptance of the bottled gases in suburban and rural areas which in the short period of about ten years has grown to the impressive total of 2,000,000 customers. These represent once potential domestic electric prospects and the results show most vividly what an alert gas industry can do in securing new business even in markets apparently easy picking for our competitor.

In any consideration of this kind, it might be well to bear in mind that there are relatively large markets in existing areas for both gas and electrical equipment. I would say that saturation ratios of 85 to 90% gas ranges in occupied homes represent typical good situations. In the New England states the figure would probably be around 65%, but electric ranges are around 4%. This merely indicates that there are still relatively large numbers of homes in some parts of the country in which coal is used for cooking and for heating in an old-fashioned coal range. Sometimes these are combination ranges, coal and gas and sometimes they are fired with range oil burners using kerosene.

One of the developments which is being watched with great interest is the all year round gas air conditioner. This unit provides in a single apparatus not much larger than a conventional boiler or furnace, all of the parts necessary for summer and winter comfort. As most of you know, the first unit of this kind is being made by Servel and it is definitely past the experimental stage. There are already several hundred installations in use in homes and in small stores. A natural question would be: "What will it cost?" I cannot answer this in view of the lack of experience with large volume production but I do know that Servel intends postwar production to be on a truly impressive scale.

Here again, as in the case of the comparison between the electrical range and the gas range, the uninformed might think that the gas industry would be faced with serious postwar electric competition. That this is unlikely is borne out by the experience which the electric industry has already gathered in the

"Mr. Vanderschley's New Flame"

Mr. Vanderschley's new flame
Mr. Vanderschley twirled his mustaches with pride as he shepherded his new gas-stove up the brownstone stoop. Let the neighbors gape... he'd show them what progress was all about!
Though the gas-stove of 1879 was crude, it sprang into action at the turn of a tap and put the coal scuttle out of business. Furthermore, it roasted the food without roasting the cook. It was eagerly bought by those forward-looking people who convert curiosity into public demand. Penetration of the popular market is achieved through an entering-wedge of influential first customers.
1,328,604 families are waiting for new gas-stoves. They are already studying brand names and qualities. Among the first to buy will be House & Garden readers. Here is a ready-made market of wide-awake families, eager to know about postwar improvements in household equipment.
House & Garden
sells America's entering-wedge market

HOUSE & GARDEN uses the accompanying headline and a period illustration in a catchy promotional advertisement. The text: "Mr. Vanderschley twirled his mustaches with pride as he shepherded his new gas-stove up the brownstone stoop. Let the neighbors gape . . . . he'd show them what progress was all about! "Though the gas-stove of 1879 was crude, it sprang into action at the turn of a tap and put the coal scuttle out of business. Furthermore, it roasted the food without roasting the cook. It was eagerly bought by those forward-looking people who convert curiosity into public demand. . . . ."

In its signature, *House & Garden* uses a modern gas range to arouse "curiosity" among "forward-looking people" who, by millions, will want tomorrow's models.

field of summer air conditioning indicating that the load factor of straight electric domestic air conditioning is not very desirable. The new all year round gas conditioner should be looked on with great favor by the electric power industry because it uses considerable electricity and will operate on a year around basis. The gas business also has much to gain by the substantial summer loads which will help offset the winter peaks due to house heating. Thus, we have a high load factor business in which electricity goes hand in hand with gas in making America's home of tomorrow a better place in which to live.

So much for the competitive siutation. I think you would feel that I had slighted the security angle of my discussion if I failed to give you some of the recent data on the income of gas companies. I would like to quote some data presented by R. E. Ginna, vice-president of the Rochester Gas and Electric Corporation. In the February 8 issue of "Gas Age" he presents a stimulating analysis of gas company earnings over the period from 1938 through 1943.

The study is based on operating utilities reporting over $5,000,000 in total assets; it reflects the operations of 221 gas and electric utilities with total fixed assets of nearly $16,000,000,000. Using the ratio of gross income to fixed capital less depreciation reserve, annual average returns are shown for the following company classifications: (1) straight manufactured gas, (2) straight natural gas, (3) straight mixed gas, (4) total straight gas, (5) straight electric and (6) combination gas and electric.

Class of Companies	*1943 Ratio Gross Income to Fixed Capital Less Depr. Res.*	*1943 Depreciation Reserve % of Fixed Capital*	*Gross Income 1943 Compared to 1938*
1. Straight Gas-Manufactured	5.56%	22%	+3%
2. Straight Gas-Natural	6.25	25	+7
3. Straight Gas-Mixed	5.54	19	+23
4. Straight Gas Total	5.95	23	+10
5. Combination Gas & Electric	5.68	16	—4
6. Straight Electric	6.29	18	+3

The 18 manufactured gas utilities are shown to have increased their return from 4.79% in 1938 to 5.56% in 1943; their gross income increased 3% in 1943 over 1938 and their depreciation reserves increased from 11% to 22% of fixed capital.

Natural gas returns were about the same in 1943 as in 1938, 6.23% as compared to 6.22%, with a high of 6.53% in 1939. Gross income increased about 7%, while depreciation and depletion reserves increased from 19% to almost 25% of fixed capital. The average return of mixed gas companies increased from 4.84% to 5.54%, while gross income increased over 23% and depreciation reserves increased from 15% to about 19%. Average returns of all straight gas utilities in the survey, 42 in number, increased from 5.58% to 5.95%, with a high of 6.05% in 1940.

The 83 combination gas and electric utilities show an average return of 6.06% in 1938 as compared with 5.68% in 1943, with a high of 6.45% in 1939. During this period their depreciation reserves grew from 10% to about 16% of fixed capital, but their 1943 gross income was 4% less than that for 1938.

The 96 straight electric companies show returns consistently higher than any other classification except straight natural, increasing from 5.99% in 1938 to 6.29% in 1943, with a high of 6.37% in 1939. Depreciation reserves increased from 11% to about 18% of fixed capital, while their 1943 gross income was about 3% higher than that for 1938.

Summarizing, the figures for each classification in 1943 were shown in the table above.

Mr. Ginna's article does not give figures showing the extent to which the average return ratios have been influenced by changes in such items as gross revenues, wages, fuel prices, and taxes. However, those groups which have materially improved their ratio of depreciation reserve to fixed capital must have accomplished much of the improvement through accruals for depreciation expense at rates in excess of what might be considered normal. This would seem to be particularly true of the manufactured gas companies, which doubled their reserves during this brief period with no appreciable increase in fixed capital. Now that depreciation reserves are at substantially higher levels than a few years ago there would seem to exist in the straight manufactured gas company income statements a "cushion" which should be reflected in any complete evaluation of earnings.

Gas fuel and its derivatives are among the nation's prime energy resources and constitute a vital component of the nation's fuel and chemical supply. Let no one misjudge the significance or ultimate future of the industry.

Glass

●A fascinating picture story of the glass industry, appearing in the March 12 issue of *Life*, tells how the glass blower plys his ancient art but how modern methods with gas-fired furnaces are making way for postwar miracles. One brilliantly-colored photograph bears this caption:

"Pots of molten glass stand in the fierce, glowing heat of a large gas-fired furnace. Each clay pot holds nearly two tons of glass and is kept in the furnace from about 36 to 72 hours at temperatures ranging up to a maximum of 2,800° F. When it reaches a syrupy consistency the hot glass is poured and rolled into flat sheets."

Another caption tells how gas flame preheats glass cylinders before they are welded by the heat of an electric arc to make a lightning arrester.

Fiber glass which can be woven into many fireproof products and has vast potentialities, receives special attention, as do the many new uses for other glass products. Gas can be proud of the prominent part it plays in this great industry.

Southwest Personnel Conference Held

THE Southwest Personnel Conference of the American Gas Association held its eighth meeting March 6 in Shreveport, Louisiana. M. V. Cousins, personnel director, United Gas Pipe Line Co., is chairman of the conference. There were 17 members present, representing 9 companies.

The morning session was devoted to a discussion of Revised Selective Service Regulations, Foremanship Training, Wage Stabilization, and experiences with the War Labor Board. C. V. Hussey of the Arkansas Power and Light Company, ably discussed Job Analysis and Job Evaluation during the afternoon session.

The next meeting will be in Shreveport.

Gas Production Developments

Stepped up tempo of current research program holds out promise of revolutionary new postwar gas-making methods

BY ALFRED R. BAYER

Research Chemist, The Brooklyn Union Gas Co., Brooklyn, N. Y.

THREE years ago the gas industry sponsored the establishment of an Institute of Gas Technology in Chicago, dedicated to the training of gas engineers and study of general production problems as long-term research projects. Exigencies of war have drastically curtailed education programs but have stepped up the tempo of both basic and development research, particularly in the fuel gas production field.

The ultimate goal of gas engineers over a long span of years has been to perfect a continuous process whereby a low cost, high heating value gas could be produced directly from any grade of coal. Perhaps in the very near future this ideal will be realized when the program known as "Complete Gasification of Solid Fuels" is completed at the Institute. Moreover, the process would free the gas engineer from dependence upon our limited stocks of petroleum distillates for enriching the gas, which emphasizes the ambitious nature of the program.

As is usual in a broad research project, final achievement of the main objective rests upon successful development of numerous intermediate operations. The Institute staff has had extraordinary success in securing basic data for two vital intermediate steps, thereby justifying hope for an early industrial application of complete gasification principles.

The Brooklyn Union Gas News, Feb. 2, 1945.

Full development of the first mechanism, described as a Solid-Fuel Flash Pulverizer, is the key to a practicable application of the entire project. The reason is clear since the pulverizer prepares fuel charges of coal or coke for all subsequent processing. Although utilizing a new technique, fundamentally the flash pulverizer is a simple application of the characteristics of a nozzle. In operation, coal of any moisture content after mechanical reduction so it will pass through a No. 5 screen is passed from a soaking zone of high pressure steam through a nozzle into an expanding low pressure zone. Steam pressures of a little under 100 pounds yield a product 40% to 50% of which will pass through a 200 mesh screen—a remarkable pulverizing efficiency for a single pass at such low energy input. Units to operate under 1,000 pounds of superheated steam already have been assembled for early testing. Solid fuels, such as coal, in such a fine state of subdivision can easily be subjected to various degrees of carbonization followed by water gas generation from coke residues; all part of a continuous process.

Novel Applications Proposed

Other novel applications and uses of great industrial value outside the field of gas technology have been proposed for this equipment. It may revolutionize completely the practices of industries which now employ mechanical pulverizers. For example, the suggested use in metallurgical fields is promising, especially as an adjunct to the sponge iron method for metal recovery. Such a single application, if successful, would have a profound effect upon steel production and consequent economic implications.

In order to raise the heating value of gases leaving the flash pulverizer generator unit, so as to meet district gas standards, the development of a second intermediate mechanism is well under way at the Institute. It is known as a Fluid-Catalyst whose function in the complete gasification program is to convert low B.t.u. components of certain gas mixtures into components of high B.t.u. In this case, carbon monoxide and hydrogen would be converted into higher heating value methane.

The Fluid Catalyst

"Catalyst" is no longer a new term to the engineer or, for that matter, to any reader of current magazine advertisements. Essentially, it is an extremely active substance—either a gas, liquid, or solid—capable of increasing or decreasing the speed of a chemical reaction, without itself being consumed or altered. We know for example that iron or steel will not rust in perfectly dry air, but a trace of moisture is sufficient to cause immediate rusting and subsequent scaling. Since the concentration of oxygen remains constant, water even in minute amount accelerates rusting and is herein a catalyst. Covering steel tools and hardware with a film of oil or grease is a common practice the success of which involves principles of catalysis.

Frequently however, a catalyst may have important application because it effectively reduces the speed of a chemical reaction. Upon one such retarding agent, lead tetraethyl, rests the last decade's tremendous advance in internal combustion engine design. As a component of premium gasoline, lead tetraethyl acts as a catalyst by reducing the speed of gasoline combustion in a cylinder and thereby reduces the tendency of the engine to "knock." The field of catalysis is one of chemistry's most intriguing. Whenever it has been applied to an industry, sensational progress has resulted. Witness the outstanding success of the petroleum industry in meeting seemingly incredible war demands for high octane aviation gasoline and synthetic rubber by the use of various catalytic techniques.

New Principle

Unfortunately, exhaustive searches for suitable catalysts in complete gasification schemes have invariably led to solid substances. The new problem thus introduced is how to promote maximum contact between gases and these active solids. A new chemical engineering principle known as "fluidizing" has been pioneered during the past four years for securing gas-solid contacting of extraordinary efficiency.

The process is briefly as follows: A vessel containing a mass of finely powdered, solid catalyst is subjected to a rising current of gas introduced at the bottom. When a proper relationship between the particle size of the solid and gas velocity is reached, the catalyst is fluidized, and attains a condition analogous to quicksand or a turbulence hav-

ing a marked resemblance to a swirling mass of boiling liquid. By proper mechanical design the fluidized, solid catalyst can be handled in the same manner as any other fluid, permitting flow through valve-controlled pipes into reactors and regenerators by means of conventional pumping equipment and liquid level controls. A high degree of control over temperature and processing materials is obtained, a control heretofore not possible. Although basic studies on the fluid-catalyst are continuing, the principle is well beyond the demonstration stage, and extensive specifications are being drawn up for preparing industrial methanation catalysts.

Scores of technical applications for solid-fluidizing have been suggested. One of particular interest to fuel gas technology is the removal of hydrogen sulfide from manufactured gas by passing it through a fluidized bed of iron oxide.

Projects independent of the Complete Gasification of Solid Fuels program are also being conducted at the Institute. These promise to influence strongly the scope of service of the entire postwar gas industry. The loss of gas lighting load may be offset many times by the increasing production from gas of raw materials for the chemical industry. This already is an important activity of the natural gas business.

Gasoline from Gas

In this connection, some mention must be made of the Institute's study and evaluation of the Fischer-Tropsch process for the production of liquid hydro-carbons from water gas or natural gas. These liquids are readily converted by conventional oil refinery processing into gasoline fractions, lubricating stocks and waxes. The process is catalytic and was developed in Germany in the middle twenties. In 1939, the last year of record, Germany produced about 2,500,000 barrels of such liquid fuels. Undoubtedly, production has undergone tremendous expansion during the war and is the mainstay in the enemy's stubborn entrenchment and continued prosecution of the war. The process is a virtual synthetic oil well. Even though raw material costs and commercial factors in our country are wholly dissimilar to European, this process offers the fuel gas industry a method for profitable gas production during periods of poor load factor or when a preponderant seasonal demand for gas creates a serious stand-by equipment problem.

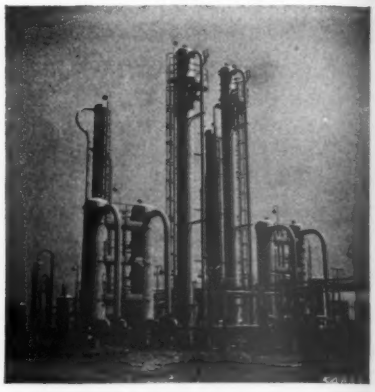
Although these new developments in fuel gas production appear revolutionary, the gas industry will welcome such changes because of its interest in maintaining and strengthening its present high position of national service in the postwar era.

Snow

● An article in a recent issue of *Gas Age* suggests that gas offers an ideal means of removing snow and ice from sidewalks and driveways. The author describes two installations which have operated successfully. Water heated by gas is circulated through pipes buried under the concrete. An instance was cited in which an 8-inch fall of snow was removed at a cost of 20 cents for gas.

Government Plans Underground Storage of Vast Quantities of Helium

The beginning and end of the trail of the helium transport line. From this typical well in the Cliffside natural gas field in Texas, thousands of cubic feet of natural gas bearing helium have been removed for processing at the Amarillo helium plant. The well shown above, one of 11 at the Cliffside field, has been reconditioned for an injection well to pipe the helium back into the ground



Bureau of Mines Helium Plant at Exell, Texas —Exterior view of the carbon dioxide removal towers where carbon dioxide, water vapor, and hydrogen sulfide are removed from the incoming helium-bearing natural gas by a "scrubbing" process. Although carbon dioxide comprises only about one-half of one per cent of the untreated gas, several tons of carbon dioxide may be removed in a day

A GIGANTIC underground cache—the greatest single helium storage reservoir in the world—is being started by the Bureau of Mines in the 50,000-acre government-owned Cliffside natural gas field in Texas where surplus helium will be piped back into the ground for conservation and future use, Secretary of the Interior Harold L. Ickes announced March 4.

Completion of a new 32-mile helium pipeline between the Exell and Amarillo, Texas, helium plants of the bureau, together with pipeline connections to the Cliffside field near Amarillo, will permit the use of this natural underground storage place for the helium not needed now by military and governmental agencies and not required for commercial distribution.

Although the helium piped back into the ground must be repurified later when it is withdrawn, the gas from the cache will be richer in helium content, the processing time will be reduced, and there will be immediate supplies of this valuable, lightweight gas on short notice.

Since 1923, the famed Cliffside field has produced more than 17 billion cubic feet of natural gas—more than enough to supply Washington, D. C., with gas for more than a year. Millions of cubic feet of helium have been extracted from this gas, and up until the present war the field was the chief source of the helium produced by the Bureau of Mines.

In using this vast potential storage space, the helium will be injected under pressure into one of the 11 producing wells of the Cliffside field. Practically all of the helium to be returned to the ground will come from Exell plant, a few miles north of Amarillo, where the bureau extracts helium from natural gas flowing to industrial and commercial plants. The amount of helium obtained depends upon the ebb and flow of gas to these plants, and it fluctuates with seasonal demands. Limited storage facilities have made

it necessary to allow large quantities of this natural gas to go to market still containing helium, which was lost forever.

The Exell-Amarillo pipeline—the second of its kind constructed by the Bureau—will serve two purposes in the helium storage and conservation program, according to Dr. R. R. Sayers, director of the Bureau of Mines. It will carry the excess helium from the Exell plant to the Cliffside well via a pipeline connection near Amarillo, and it will transport helium from Exell to the Amarillo plant for loading into tank cars. In addition, the production capacity of the Amarillo plant will not be limited to gas from the original Cliffside field, but will be increased many-fold by processing the high-purity helium from the underground storage.

The Bureau of Mines completed the first high-pressure helium transport pipeline in March 1944, when a 90-mile line was opened between the bureau's Navajo helium plant near Shiprock, N. Mex., and the loading terminal near Gallup, N. Mex. This line was designed primarily to facilitate the transportation of helium, and marked the first time that such a valuable gas as helium was handled in cross-country pipelines.

In constructing the 2-inch Amarillo-Exell line, several new features were embodied, among which was the relatively new method of pressure welding. In this machine process which does not require welding rods, the connecting ends of the pipe are heated to welding temperature and forced together by hydraulic pressure to form a dense and uniform weld.

By this process, virtually an unbroken 2-inch cylinder was extended for 32 miles, under rivers, through valleys, and over elevations. But before being coated and wrapped to minimize corrosion, the line was filled with natural gas and carefully examined for leaks. In checking for leaks, every inch of the line was submerged and passed through a movable water trough. By using gas for internal pressure, the slightest leak was detected when the line was placed in water.

To guard against damage and loss of helium when inadvertent breaks occur, the two lines were equipped with a series of special valves, designed by a Bureau of Mines employee, which close the pipelines automatically on each side of the break in case of a sudden upsurge in flow from the predetermined rate of the line. The valves prevent a loss of the entire volume of helium in the lines, limiting the leakage to the section between check valves.

Special precautions were taken to guard the Exell-Amarillo line against floods of the Canadian River, which have broken many pipelines which lacked sufficient weight to keep them below the moving sand and water. Instead of the conventional single crossing, the helium line was divided and two separate transmission lines were placed across the river, one looped about 150 feet upstream from the actual crossing to allow settling as sand and gravel are washed from under the line. As a further safeguard, each of the lines was surrounded by a 4-inch pipeline and the space between the pipes filled with cement to add more weight.

Safety Merit Award to United Gas

FOR establishing a record of safe operations totaling more than a million manhours without injury, the Southwest Louisiana District of the United Gas Pipe Line Co., recently received a merit award from the American Gas Association. Ninety-five employees of this district worked a total of 1,022,352 manhours from Nov. 14, 1937 to Oct. 25, 1944 without a disabling injury.

The award was presented at a foremen's meeting Feb. 15 with appropriate ceremony.

Texas-Ohio Gas Line Proposed

THE Federal Power Commission has received an application by Metropolitan Eastern Corporation for a certificate of public convenience and necessity to construct and operate 825 miles of 18-inch natural gas pipeline extending from the east Texas gas fields to Ohio. The project would include five compressor stations totaling 25,600 horsepower and have an initial daily capacity of 140 million cubic feet of gas. Total cost is estimated at $23,500,000 with completion in Oct. 1945.

Bridgeport Boosts Better Breakfasts

A RECOGNIZED national leader in industrial nutrition education as a result of pioneering work on the "Pack a Lunch a Man Can Work On" campaign of 1942, reported in the May A. G. A. MONTHLY of that year, The Bridgeport Gas Light Company has again stepped out in front with promotion of the Good Breakfast movement. Sparkplug of both efforts has been R. A. Malony, sales manager of the company, who has supplied much of the promotional drive behind these campaigns for better industrial nutrition.

The Good Breakfasts for Workers Campaign was set in motion by the War Food Administration in the fall of 1944. Since last October, Bridgeport has been making its citizens conscious that a good breakfast means the beginning of a good day. At the suggestion of Dr. C. F. Yeager, Remington Arms Company physician, the breakfast activity was started as a supplement to the Bridgeport lunchbox campaign which gained national prominence.

A new Breakfast Folder has just been published by the gas company similar in style to the "Pack-a-lunch-a-man-can-work-on" folder. Requests for the lunch folder came from every state in the Union and several foreign countries. Twenty-three hundred copies of the new Breakfast Folder have been distributed through one High School alone.

Many of the campaign organizational meetings have been held in the gas company auditorium with Miss O'Meara, home service director, assisting Rheta Hyatt, community nutritionist, who is campaign director.

Newspaper advertising was used by the company to support the campaign at the outset. Department stores, food retailers and manufacturers have joined in the drive. Public Schools and Parent Teacher organizations are urging better school child breakfasts. Local industries are backing the campaign through the Manufacturers Association.

To measure the penetration and beneficial effects to date on the community, Chappell and Company, national market analysts, are now conducting a survey.

DAWN PATROL!
Pop's breakfast is a family affair — before he's on his way the whole house is vibrating with confusion. And all over a midget breakfast that will hardly last him until he gets to work. The rest of the morning he's really hungry whether he knows it or not. It stands to reason that you need a good breakfast to start a good day.
We have lots of suggestions for a good breakfast — call our Home Service Department.
BRIDGEPORT GAS LIGHT CO.

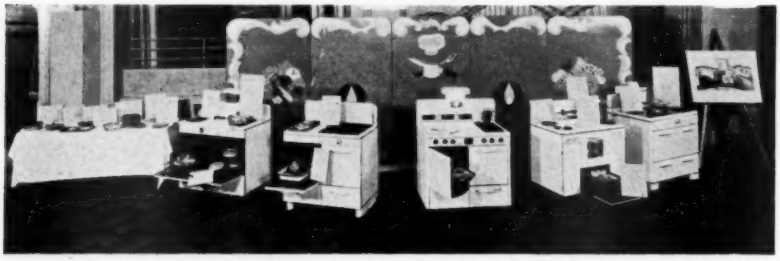
Catchy newspaper advertisements such as this are spearheading the Better Breakfast drive

THE BRIDGEPORT BETTER BREAKFAST PROGRAM
Wake up and Eat a BETTER BREAKFAST
THIS FOLDER ATTEMPTS TO GIVE YOU THE ANSWERS
Get a Better Breakfast to do a Better Job
JOIN US IN BEING A BETTER BREAKFAST BOOSTER

Breakfast tips and other information are given in this 8½ x 11-inch, 4-page folder

Teachers Hear Modern Gas Story at Pittsburgh Food Clinic

Small scale models of "New Freedom Gas Kitchens," part of the exhibition at the Equipment and Food Clinic, show how there'll be "economy of effort" for the homemaker of the future who demands and gets a kitchen like these



Every conceivable use for modern gas cooking is demonstrated in this display of prepared dishes, cooking vessels and five brands of modern gas ranges. The dishes were prepared by Home Service personnel of the three natural gas companies

E. Carl Sorby, vice-president of the Geo. D. Roper Company, demonstrates effectively that cooking with the modern gas range is fast, clean, effortless and economical of both food and fuel. Miss Camille Caldara, Manufacturers Light and Heat Company, assists

HOME Economics teachers of Pittsburgh and Allegheny County schools were guests of the Home Service Departments of the natural gas companies serving the Pittsburgh area at a "Home Economics Equipment and Food Clinic," February 22. Although the attendance totaled 170, potentially the message of modern gas cooking and the impressions received by teachers were carried to thousands of city and county pupils, who are the future homemaker customers of the gas business.

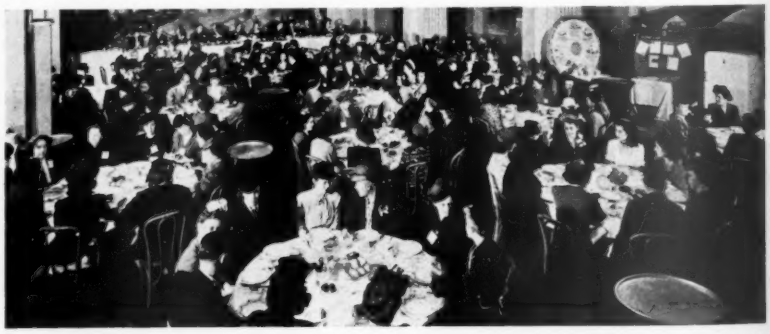
Previously prepared dishes were on display in combination with various types of cooking vessels and an exhibition of five brands of modern gas ranges and demonstrating practically every conceivable use of gas cooking. Small scale models and water color renditions of "New Freedom Gas Kitchens," food charts, cutaway range and water heater models, a full size gas refrigerator and a small scale unit, and standard types of range burners and controls completed the exhibition.

Following the dinner, E. Carl Sorby, vice-president of George D. Roper Corporation, makers of the Roper range, gave an entertaining demonstration of plain and fancy cooking, effectively demonstrating that modern gas cooking is fast, clean, effortless and economical of both food and fuel. Mr. Sorby was assisted by Camille Caldara, of the Manufacturers' Light and Heat Company, East Liverpool, Ohio.

Hostesses for the occasion were Kathryn L. Barnes, home service director, Equitable Gas Company, Flora G. Dowler, supervisor, Home Service, Manufacturers' Light and Heat Company and Ruth M. Severson, supervisor, home service, Peoples Natural Gas Company, assisted by the members of their departments.

Jessie McQueen, A. G. A. home service counsellor, addressed the assembly on "Economy of Effort," applying the science of motion study to home activities, which with the aid of modern kitchen appliances and appointments, can substantially reduce the homemaker's daily effort.

Christy Payne, Jr., sales manager of the Peoples Natural Gas Company, was master of ceremonies.



One hundred seventy Home Economics teachers of Pittsburgh and Allegheny County Schools were dinner guests of the Home Service Departments of Pittsburgh natural gas companies, during the Home Economics Equipment and Food Clinic in the William Penn Hotel, February 22

1,085-Mile Gas Pipe Line Proposed

APPLICATION for permission to construct a 1085 mile natural gas pipe line from near Guymon, Okla., to points near Detroit and Toledo, O., has been filed with the Federal Power Commission by the American Light & Traction Company.

Total cost of the line, which would be of 22- and 26-inch diameter, was estimated by the company at $51,500,000. With construction beginning not later than May 1, 1945, it would be completed this year. The application said the project was intended to supply the Ohio Fuel Gas Co. with 125,000,000 cubic feet of natural gas a day, and to fill requirements of the Michigan Consolidated Gas Co. above the amount to be furnished by Panhandle Eastern Pipe Line Co. under existing contracts.

French Gas Association Now Functioning

THE American Gas Association has renewed its former pleasant contact with the French gas industry through the Union Syndicale de L'Industrie du Gaz en France, the French national trade association. In a letter dated January 27, 1945, Mr. Mongin, general secretary, wrote A. G. A. Managing Director Alexander Forward as follows:

"During the four years which have just slipped away and particularly the last months, the gas industry has suffered from much destruction: many of our works are entirely demolished; almost all of the others have more or less deteriorated; few are still intact and most of the distribution systems have suffered grave damages.

"In spite of the innumerable difficulties resulting from the German occupation and principally from the lack of coal and other basic materials which has been accentuated with the years, we have been working in France as well as we could. Our efforts were primarily directed at substitutes for these materials and ordinary items and to obtain the greatest possible efficiency with gas.

"You will, no doubt, be interested to learn the results of our work during this troublesome period and we will be glad to send you, as soon as it becomes possible, some of our papers which summarize these matters.

"We are looking forward to the sending of a mission to the United States to resume official contact with the American Gas Association and to see the developments which you have made in America both from the viewpoint of manufacturing and that of utilization. We should moreover let you know that important sources of natural gas were discovered in France and since you have had so much experience in its distribution and its use, this would be most valuable to us."

War Insurance Extended

WAR Damage Corporation announced Feb. 28 that in consideration of premiums heretofore collected all war damage insurance duly in force on February 28, 1945, will be extended automatically for a period of twelve months from the expiration date of the respective policies without the payment of additional premium or other charge. No action is required of the insured to keep the insurance in force for this extended period.

Dep't Becomes Bureau

EFFECTIVE March 20, the name of the Statistical Department of the American Gas Association was changed to Statistical Bureau. The former name is now inappropriate because of the setting up of Natural Gas and Manufactured Gas Departments with definite supervisory duties and jurisdiction. The new name is comparable with the Publicity Bureau and the pending Promotional Bureau of the Association.

In their quaint little aprons and bonnets the young ladies tell their audiences what to do about the gasoline shortage and charmingly suggest the "Surrey With the Fringe on Top"

Thousands of Servicemen Entertained at Boston Consolidated Shows

OVER 100,000 men of the Armed Services have been entertained in 105 performances given by the Boston Consolidated Gas Company's Camp Show, organized in 1942. Shows have been given in army camps, naval stations, ships in port, and at military hospitals in Massachusetts, Rhode Island and New Hampshire. Men entertained have come from every state in the U. S. A., from England, Canada, the Philippines, Hawaii, New Zealand and France.

B. C. G. Employees' Association members became interested in the need for sociability of many thousands of homesick boys, in khaki and blue, who came flocking into Boston on furlough days, looking for fun. A committee of four thought out a plan and immediately posted notices on company bulletin boards asking for volunteers who might wish to be trained into an entertainment group. Stenographers, clerks, bookkeepers and young men with musical ability volunteered. Dance routines were taught and Charles McConaghy, head of the company's industrial service department, volunteered his services to direct the show and train a group of musicians for a swing band, which was to play for show acts and for the dancing which follows most entertainments.

First, shows were given in the company's auditorium to which soldiers, sailors and marines were invited through the U. S. O. Later, requests began to come in for performances at camps, on ships and in hospitals. Military organizations furnish transportation for the performances and trips have been made in everything from comfortable buses and station wagons to not-so-comfortable army trucks and ambulances, and even P.T. boats when trips are made to harbor posts. Forty-six employees are in the Camp Show organization, including performers, master-of-ceremonies, directors, band members, show cook and stage assistants. Personnel frequently changes as members join the armed services themselves. Always there are other volunteers anxious to take up the work.

The Boston Consolidated Gas Company Employees' Association was formed in 1930 to function as a social organization, but when the war came its social activities were laid aside for cooperation in the war effort.

B. C. G. Camp Show girls inject a bit of Good Neighbor Policy as they do their South American number

Central Electric Buys Nebraska Gas Utility

CENTRAL ELECTRIC AND GAS CO. announced Mar. 8 that it had completed the purchase from Continental Gas and Electric Corp., a subsidiary of United Light and Power Co., of the gas properties of Iowa-Nebraska Light and Power Co. in Lincoln, Neb., and vicinity.

Gas Industry Glossary

THE British Standards Association recently published a "Glossary of Terms Used in the Gas Industry," a 54-page printed publication listing and describing terms commonly used by the industry. A copy is available for inspection at the American Standards Association, 70 East 45th St., New York 17, N. Y., of which the American Gas Association is a member.

National Magazines Survey Appliances

VALUABLE data for gas industry advertising and sales executives are found in detailed surveys just released by two home-making magazines: *Woman's Home Companion* and *Good Housekeeping*.

"Homemaking and Appliances; A Psychological Survey" by the Research Department of Crowell-Collier Publishing Co. digests the results of studies by Dr. Ernest Dichter into the psychology of housekeeping, the attitude of women towards appliances. There are three distinct and basic types of women, he found:

The True Housewife, whose interests are monopolized by her home.

The Career Woman (or potential career woman) who hates housework.

The Balanced Homemaker, who does both housework and outside work, or is capable of doing both.

A national sample of 2,467 homemakers throughout the nation was obtained by personal interview; a questionnaire was then mailed to the *Woman's Home Companion* panel of 2,000 reader-reporters. Both groups were carefully diversified by geographic area, size of city, income, marital status, age groups, psychological types.

It should be emphasized that some 39 per cent of the national sample was obtained in cities under 10,000 inhabitants, tending toward relatively greater emphasis on availability of electric service over gas.

The national group was asked: "Does your refrigerator give satisfactory service?" Of electric owners 94% said "Yes"; gas 85%; ice 72%. Median age of refrigerators was: Electric 6 years, gas 7, ice 10. Of the total, 32% plan to buy a new refrigerator when they are available.

Gas ranges are used by 61%, electric 15%; and 33% will buy a new range after the war as follows: Electric 14%, gas 11%. Of these prospects, 80% who own electric ranges will buy another, 5% will buy gas; 40% of gas owners will buy electric, 52% will again buy a gas range. Gas ranges were 7 years old, electric 5. Satisfied users were: Gas 87%, electric 93%.

Balanced 31% *Housewife 51%* *Career 11%*

Most frequent comment was "give us a range that is easy to clean" and next was "we want a higher oven to avoid stooping."

Good Housekeeping devotes its Fourth Consumer Panel Report to "Range and Cooking Habits." The 7,500 women consulted live in 842 towns, but 28% are in cities of less than 10,000, again weighting the national averages toward electricity.

Gas ranges are used by 67%, electric 23%; median age of gas ranges—6 years, electric 5. Speed of gas range cooking on top burners was satisfactory to 97%, with the electric figure 86%.

Most frequent complaints: Gas broiler not in convenient place 51%; difficult to clean 71%. Electric broiler too smoky 52%; cannot be used when oven is on 91%.

Gas ranges are "good bakers" in 83% of these homes, electric 91%. Gas ovens have uneven heat distribution 75%, and electric 86%.

Future range improvements desired are: Automatic time control for oven 20%; glass panel in oven door 15%; deepwell cooker 11%; reminder clock 9%; larger oven 8%; automatic heat control for oven 8%; simmer type burners 7%; easier to clean burners and oven 9%; heavier insulation in oven 5%; prefer electric range 4%; more efficient broiler 4%; oven raised to more convenient height 3.5%; more space between burners 3%.—*The Blue Flame Is on the March.*

High Frequency Cooking No Threat

NEWEST wonder being discussed today in the "marvel" magazines is high frequency electric cooking. "Broil a steak in 3 seconds, bake a cake in 2 seconds, and boil eggs in less time than it takes to tell about it," Dr. So-and-So says in a speech.

While high frequency heat does exist and has been used in manufacturing for at least a decade, it has many drawbacks for domestic cooking, *Electrical Merchandising* says. In addition to being out of all proportion in cost it would be complicated and impractical. After citing the mechanical difficulties involved, the article states: "Experts don't see much chance of getting around a lot of high-priced bulky equipment."

And even IF these problems are solved, there still exists the operating problem which *Electrical Merchandising* summarizes as follows:

"The catch of the whole setup lies in human nature and foods that American housewives would put in such a range.

"It must be remembered that the carmelizing of sugar and the searing of steaks have much to do with giving foods their pleasing flavor. Foods cooked by high frequency methods have all the charm of a New England boiled dinner. All right for some things but not as a perpetual diet.

"Different foods placed in a high frequency oven give entirely different results. Thoroughly mixed sausage, for example, cooks pretty well. On the other hand, with steaks the fat burns before the lean meat is thoroughly cooked. With chicken there was a char in the bone before the outside was done.

"A bakery experimenting with high frequency or dielectric cooking of bread found outside of the loaf unappetizing looking and the crust on the inside.

"Greatest holdback is the taste, as it is very difficult to reconcile the American public to food that will taste entirely different from what they are accustomed to. Electrical appliances are devices made for use by people who are inexpert in their handling. While there may be some advantage to biscuits that can pop out in seconds, steaks that are done in a whiff of time, the extreme speed means fresh perils of burning and overcooking which offset the advantages.

"Authorities like Wiley Wenger of RCA explain that, while rapid strides are being made in sterilization, pasteurization, cooking and enzyme control of foods and drugs by dielectric heating, it is generally impractical on a commercial scale at present. Limitations are lack of homogeneity in the product, cost of providing necessary flexibility and apparatus, and insufficiency of experimental data. With present rate of progress, it may have a bright future in commercial fields under expert guidance—but—for the housewife it remains a Sunday supplement story."

Baths

● It has been said that the American public worships the bathroom.

According to historical records, bathing had a hard time to win its way to popular favor and met with much opposition. The Boston Council passed an ordinance in 1845 outlawing bathing for its citizens except upon medical advice, and in Philadelphia the city fathers tried to enforce a ban on bathing between November 1st and March 15th.

—*The Bettman Archive.*

New A. G. A. Members

GAS COMPANIES

Alabama Power Co., Birmingham, Alabama (S. J. Spurgeon)*
Central Florida Gas Corp., Winter Haven, Fla. (J. W. Owen)
Iowa Power and Light Co., Des Moines, Iowa (C. A. Leland)
Iowa Southern Utilities Co., Centerville, Iowa (Geo. T. Perrine)
Mississippi Public Service Co. (H. K. Griffin)
North American Utility & Construction Corp. (Walter G. Groth)
Pittsburgh and West Virginia Gas Co., Pittsburgh, Pa. (D. P. Hartson)
Southern Carolina Electric & Gas Co., Columbia, S. C. (W. H. Kendrick)
Tennessee Gas & Transmission Co., Houston, Texas (W. C. Norman)
Western Kentucky Gas Company, Owensboro, Ky. (W. T. Stevenson)

MANUFACTURERS COMPANIES

Addressograph-Multigraph Corp., Cleveland, Ohio (C. L. Comegys)
Fisher Furnace Co., Chicago, Ill. (Kenneth D. Hoke)
Ladish Drop Forge Co., Cudahy, Wisc. (J. F. Hacker)
Mahl Mfg. Company, Huntington Park, Calif. (J. Thomas Mahl)
E. L. Mustee & Sons, Cleveland, Ohio (Bernard E. Mustee)
Naco Manufacturing Co., Los Angeles, Calif. (James L. Hess)
Pernot & Rich, Inc., Los Angeles, Calif. (Frederick E. Pernot)
Renown Stove Co., Owosso, Mich. (B. A. Nagelvoort)

ASSOCIATE COMPANIES

Fenton Kelsey Co., Madison, Wisc. (Fenton Kelsey)

INDIVIDUAL MEMBERS

E. R. Ames, Southern Counties Gas Co., Los Angeles, Calif.
Carl O. Anderson, Southern Counties Gas Co., Los Angeles, Calif.
Roger M. Anderson, Binghamton Gas Works, Binghamton, N. Y.
C. A. Anderson, Wisconsin Public Service Corp., Sheboygan, Wisc.
C. E. Baltzel, New York State Elec. & Gas Corp., Cortland, N. Y.
A. B. Banowsky, Payne Furnace & Supply Co., Beverly Hills, Calif.
H. Bartholomew, Phillips Petroleum Co., New York, N. Y.
Mercedes A. Bates, Southern California Gas Co., San Jose, Calif.
Erwin W. Blind, Laclede Gas Light Co., St. Louis, Mo.
B. F. Bohnhardt, Southern California Gas Co., Los Angeles, Calif.
Walter C. Bomhoff, Equitable Gas Co., Pittsburgh, Pa.
Oscar Book, Southern California Gas Co., Los Angeles, Calif.
Charles Renwick Brick, Southern Natural Gas Co., Birmingham, Ala.
Henry H. Buell, Pacific Gas & Electric Co., San Jose, Calif.
H. I. Burgess, Majestic Manufacturing Co., St. Louis, Mo.
Chester W. Burris, Eastern Gas & Fuel Associates, Everett, Mass.
Harry Cain, United Gas Corp., Houston, Texas
J. M. Cardiff, Southern California Gas Co., Los Angeles, Calif.
Glenn M. Clark, Cities Service Co., Bartlesville, Okla.
Newell A. Clark, Northampton Gas Light Co., Northampton, Mass.
Garrett W. Craig, Public Service Co. of Colorado, Brighton, Colo.
Kirby E. Crenshaw, Gas Advisers, Bartlesville, Okla.
J. A. Cunningham, Southern California Gas Co., Los Angeles, Calif.

Herbert R. Davis, Davis, Fisher, Saskatoon, Canada
John H. Day, Panhandle Eastern Pipe Line Co., Kansas City, Mo.
Robert L. Day, Jas. Graham Mfg. Co., Los Angeles, Calif.
Richard W. DeCou, Utility Realization Corp., Philadelphia, Pa.

Loren W. East, Consulting Engineer, Los Angeles, Calif.
Louis S. Egea, Selas Corporation, Los Angeles, Calif.

Daniel J. Fagin, The Laclede Gas Light Co., St. Louis, Mo.
R. Ferman, Gas Consumers Association, Detroit, Mich.
Chas. W. Fischle, Southern Counties Gas Co., Los Angeles, Calif.
R. S. Florer, Southern California Gas Co., Los Angeles, Calif.
D. W. Drye, Equitable Gas Co., Pittsburgh, Pa.
Eldon I. Fullberg, Southern Counties Gas Co., Los Angeles, Calif.

Henry M. Gerken, The Laclede Gas Light Co., St. Louis, Mo.
Anita Glienke, Milwaukee Gas Light Co., Milwaukee, Wisc.
A. B. Goodin, Southern California Gas Co., Los Angeles, Calif.
Chas. N. Gregory, Jr., Southern Counties Gas Co., Los Angeles, Calif.
Walter G. Groth, North American Utility & Constr. Corp., New York, N. Y.
Wm. H. Gudgeon, Southern Counties Gas Co., Los Angeles, Calif.

Francis T. Hager, Philadelphia Gas Works Co., Philadelphia, Pa.
Glenn M. Hammond, Michigan Consolidated Gas Co., Grand Rapids, Mich.
Arthur C. Hansen, Brooklyn Union Gas Co., Brooklyn, N. Y.
Milton T. Hartman, Southern Counties Gas Co., Los Angeles, Calif.
T. E. Hawkins, United Gas Corporation, Houston, Texas
E. H. Hegemann, Equitable Gas Co., Pittsburgh, Penna.
Arthur Higgs, Yorkshire Industrial Gas Development Centre, Leeds, England
Jas. M. Hill, Honolulu Gas Corporation, Honolulu, Hawaii
Thomas J. Hill, Equitable Gas Co., Pittsburgh, Penna.
Clarence R. Holmes, Citizens Gas & Coke Utility, Denver, Colo.
Edward L. Horner, The Laclede Gas Light Co., St. Louis, Mo.
J. K. Horton, Pacific Public Service Co., San Francisco, Calif.
D. H. Hyatt, Southern California Gas Co., Los Angeles, Calif.

S. B. Irelan, Cities Service Gas Co., Bartlesville, Okla.

S. E. Johnson, Cooper-Bessemer Corp., Mt. Vernon, Ohio
Leland Jones, Seattle Gas Company, Seattle, Washington
John P. Jordon, Utility Realization Corp., Philadelphia, Pa.

Alfred H. Ketelhohn, Milwaukee Gas Light Co., Milwaukee, Wisc.
L. Martin Krautter, HenripHurst & McDonald, Inc., Chicago, Ill.

Henry J. Lissi, Southern California Gas Co., Los Angeles, Calif.
Kirk H. Logan, Cast Iron Pipe Research Association, Chicago, Ill.

Jas. D. MacFarland, Southern Counties Gas Co., Los Angeles, Calif.
Leon S. Maehling, Equitable Gas Co., Pittsburgh, Pa.
Albert W. Marchiando, Southern Counties Gas Co., Los Angeles, Calif.
Arthur E. Mason, Southern California Gas Co., Los Angeles, Calif.
Wayne Matthews, Southern Counties Gas Co., Los Angeles, Calif.
F. A. McCandlies, Southern California Gas Co., Los Angeles, Calif.
Norman H. McGlashan, Southern Counties Gas Co., Los Angeles, Calif.
Chas. H. McNulty, Southern Counties Gas Co., Los Angeles, Calif.
Martin P. McVey, The Laclede Gas Light Co., St. Louis, Mo.
W. R. Metzger, Equitable Gas Co., Pittsburgh, Pa.
Jack H. Mikula, Milwaukee Gas Light Co., Pittsburgh, Pa.

*Names in parentheses are Company Delegates.

Harry I. Miller, Wisconsin Public Service Corp., Milwaukee, Wisc.
John C. Miller, Connecticut Light & Power Co., Norwalk, Conn.
D. F. Morgan, Carbide & Carbon Chemicals Corp., New York, N. Y.
Victor Morrison, Southern Counties Gas Co., Los Angeles, Calif.
R. L. Morton, Cities Service Gas Co., Bartlesville, Okla.
Bennett Myers, Doughnut Corp. of America, Ellicott City, Md.

Ralph Nabors, Pacific Gas & Electric Co., San Jose, Calif.
John J. Needham, The Laclede Gas Light Co., St. Louis, Mo.
A. A. Newton, Public Service Co. of Colorado, Fort Collins, Colo.
William H. Nix, Providence Gas Company, Providence, R. I.

J. M. O'Mara, Southern California Gas Co., Los Angeles, Calif.
Stewart Patrick Osborn, Binghamton Gas Works, Binghamton, N. Y.

Roland R. Paulin, Michigan Consolidated Gas Co., Grand Rapids, Mich.
Oliver Pritchard, Brooklyn Union Gas Co., Brooklyn, N. Y.
B. K. Proctor, Southern California Gas Co., Los Angeles, Calif.

Elmer L. Ramsey, The Laclede Gas Light Co., St. Louis, Mo.
C. H. Ray, Southern California Gas Co., Los Angeles, Calif.
Matthew C. Reilly, Southern Counties Gas Co., Los Angeles, Calif.
D. J. Reimers, Minnesota Valley Natural Gas Co., Saint Peter, Minn.
Thomas E. Rush, Queens Boro. Gas & Elec. Co., Far Rockaway, N. Y.
C. T. Ryce, Gas Consumers Association, Washington, D. C.

S. G. Sageman, Southern California Gas Co., Los Angeles, Calif.
F. Ray Schallert, Southern Counties Gas Co., Los Angeles, Calif.
A. H. Schettler, St. Louis County Gas Co., Webster Grove, Mo.
A. W. Scofield, Minnesota Valley Natural Gas Co., Saint Peter, Minn.
C. D. Scott, Southern Counties Gas Co., Los Angeles, Calif.
C. A. Shafer, Northwest Cities Gas Co., Walla Walla, Wash.
Raymond M. Sheda, Denver Fire Clay Co., Denver, Colo.
Charles D. Slimpin, Gas Consumers Association, Chicago, Ill.
Ward Small, Jr., Southern Counties Gas Co., Los Angeles, Calif.
William T. Sperry, Public Service Electric Co., Newark, N. J.
Hugh Stewart, San Diego Gas & Elec. Co., San Diego, Calif.
M. E. Stewart, Minnesota Valley Natural Gas Co., Saint Peter, Minn.
Chas. M. Sturkey, Seattle Gas Co., Seattle, Wash.
W. T. Sutter, Sutter Water Heater & Plumbing Co., Houston, Texas
Jas. B. Swan, Southern Counties Gas Co., Los Angeles, Calif.

William Kenneth Tate, The Wandsworth and District Gas Co., London, England
J. Hawley Taussig, Jr., United Engineers & Constrs., Inc., Philadelphia, Pa.
G. W. Tesch, Wisconsin Public Service Corporation, Sheboygan, Wisc.
G. H. Tibbils, Gas Consumers Association, Minneapolis, Minn.
R. N. Tounsend, Southern California Gas Co., Los Angeles, Calif.
Deane W. True, Milwaukee Gas Light Co., Milwaukee, Wisc.
David Turk, The Laclede Gas Light Co., St. Louis, Mo.

Raymond J. Vandergriff, The Laclede Gas Light Co., St. Louis, Mo.
Herbert F. Voertman, The Laclede Gas Light Co., St. Louis, Mo.

John Howard Warden, Oklahoma Natural Gas Co., Tulsa, Okla.
Don Warner, The Gas Service Co., Kansas City, Mo.
Merle A. Washabaugh, Equitable Gas Co., Pittsburgh, Pa.
T. L. B. Webb, Southern California Gas Co., Los Angeles, Calif.
R. D. Webster, Northampton Gas Light Co., Northampton, Mass.
R. O. Wilhelmi, United Gas Pipe Line Co., Shreveport, La.
Robert S. Williams, The United Gas Improvement Co., Philadelphia, Pa.
A. Dyke Wilson, The Laclede Gas Light Co., St. Louis, Mo.
William M. Witter, National Tube Co., Lorain, Ohio
Jas. J. Wogan, Pacific Gas & Electric Co., Sacramento, Calif.

Carl M. Yaeger, Jones & Laughlin Steel Corp., Cleveland, Ohio

Production of Heat-Treating Furnaces Wins "E" for Surface Combustion

SURFACE Combustion, Toledo, Ohio, on March 8 was awarded the Army-Navy "E" in recognition of a job which started long before Pearl Harbor and which has made a tremendous contribution to the firepower of America's armed forces. One example of the type of job done is the development of walking beam industrial gas furnaces which have now been made by the Toledo company in sufficient quantity to heat treat in a single day all the medium calibre shells used in the 70-day Normandy campaign.

In presenting the "E" to Frank H. Adams, general manager of Surface Combustion, Lieut. Col. H. P. Croft, chief of the Cleveland Ordnance District's industrial division, pointed out that the company had to design, build and install gas-fired heat-treating furnaces before much of our actual war production could even begin. There was no delay in this job, he said.

The citation for meritorious service by the workers was read by Lieut. Comm. E. C. Stark of the Procurement and Materials Office of the Navy, Detroit, and a token presentation of the "E" pins was made by him to Asa Willmarth, shop employee with the longest service record.

In addition to the walking beam furnace for production line methods on shell heat-treating, Surface Combustion makes equipment for gun hardening and drawing, soaking pits used in most of the steel mills, atmospheric control furnaces for bright finishes on heat-treated metals, skin recovery of decarburized steel surfaces and numerous other types of industrial furnaces including many used in the glass and chemical industries as well as those for all fields of metal production and processing.

The "E" presentation ceremony at Toledo. Left to right: Lt. Com. E. C. Stark, Lt. Col. Harry P. Croft, Frank H. Adams, general manager, Surface Combustion, and Paul McClelland

Convention Calendar

APRIL

17-19 •Southwestern Gas Measurement Short Course, Norman, Okla.

MAY

7-11 •National Fire Protection Association, Annual Meeting, Palmer House, Chicago, Ill.

16 •Pennsylvania Gas Association, Annual Meeting, Philadelphia, Pa.

JUNE

12-14 •Institution of Gas Engineers, Annual Meeting, London, England.

19-22 •Canadian Gas Association, Annual Convention, Murray Bay, Quebec.

Accounting Section

C. E. PACKMAN, Chairman E. F. EMBREE, Vice-Chairman O. W. BREWER, Secretary

Financing Appliance Installment Sales

BY L. A. MAYO

Supervisor of Local Accounts, The Connecticut Light and Power Co., Hartford, Conn.

L. A. Mayo

SINCE 1922, The Connecticut Light and Power Company has been actively engaged in merchandising electric and gas appliances, selling them either on open accounts or on installment accounts. Appliance sales increased from a modest beginning to a prewar gross volume of about $2,000,000 annually. Wartime restrictions in appliance production, as well as in installment credit, resulted in the reduction of the number and amount of installment accounts on our books to the lowest point in many years, which makes this an opportune time to adopt a change in policy.

Few financial houses offered plans for underwriting installment accounts when the company started selling appliances. The funds had to be furnished by the company and, as the merchandising programs expanded, more and more funds had to be provided.

Proper Bank Function

The company has always believed that furnishing funds for this purpose was a proper function of banks, but there were difficulties in bringing that about. It was desirable for the company to preserve all customer contacts. If the company had discounted the installment paper in the normal way, which could easily have been done, those contacts would have been removed and the contingent liability would have had to appear on the books of the company.

In cooperation with The Hartford-Connecticut Trust Company of Hartford, a new plan for financing appliance installment sales was developed. This bank, a leading one in the state, operates seven branches in our territory. The company will use the plan in its 27 district and branch offices, serving about 203,000 customers. These offices cover 107 communities served with electricity and 30 localities with gas, having a population of approximately 703,000 according to the 1940 Federal Census. The installment sales to be financed will include those to domestic, commercial and industrial customers, and similar sales made by dealers and discounted by the company.

What the New Plan Accomplishes

The plan has unique features which will achieve several highly desirable objectives and simplify its operation. The bank will purchase the accounts *without recourse*, so the company's balance sheet will not need to show a contingent liability. This feature is an innovation and gives the company a distinct advantage not generally provided for in other financing plans. It will take the company out of the financing field, with the bank assuming this function. Raising merchandise capital periodically will not be necessary as such funds will be automatically furnished when sales programs are expanded.

The company will retain full control of its merchandising policies and will be entirely free to develop this business. The company will act as the bank's agent, without compensation, in bookkeeping and collection matters, eliminating duplications in this work, which will result in a low operating cost for the plan. The company will retain the important advantage of dealing directly with its customers as heretofore, so that satisfactory relations will be continued.

Operation of Plan

The agreement executed between the company and the bank will cause only minor changes in the company's accounting procedures with no increase in expenses. The company will establish the installed prices of appliances, minimum and maximum terms, amount of financing charges, approve credits, and collect down payments. As sales are made they will be set up in the company's Accounts Receivable and billed to customers. At the end of the month, the bank will purchase *without recourse* the balances of all new agreements made that month, at face value less a small percentage as a reserve for uncollectible bills. This reserve will be the sole property of the bank and will be used to absorb bad debts.

The original sales agreements will be assigned and delivered to the bank, which will have five days to purchase or re-assign them to the company if the bank elects not to purchase. The company will be responsible for all payments collected for the bank until such funds have been paid to them. Payments collected will be deposited locally with company funds. All monthly collections will be paid to the bank not later than the tenth day of the next month. The company will pay to the bank, within five days from receipt of their invoice, a monthly financing or interest charge at a predetermined rate based upon the average daily balance outstanding on these accounts during the previous month.

Thereafter, until such agreements are paid or otherwise liquidated, the company will perform all bookkeeping work; show on its service bills the monthly installments due; answer customer questions; and follow collections. The company is authorized to take whatever collection action may be deemed advisable, including the institution of proceedings to repossess appliances.

Determining Uncollectibles

The company is also authorized to determine when balances become uncollectible. The bank will reduce its outstanding balance by such amounts, charging them against the reserve. When six monthly installments are unpaid, the entire balance of those accounts will be presumed to be uncollectible. Obviously, it will be in the company's interest to minimize this possibility. The bank will be advised monthly of balances which have become six months delinquent. The company will remit to the bank all amounts received on accounts previously reported as uncollectible, which amounts will be credited by the bank to the reserve.

Quarterly reports will be furnished to the bank by the company, showing for each agreement its number, date, purchaser's name, amount paid by bank, balance due, amount delinquent if any, and the period of the delinquency. As the volume of accounts increases, preparing such reports might mean considerable work, but these operations will be simplified by the use of punched cards and tabulating machines.

In cases where it becomes necessary, because of delinquency, to repossess appliances from customers, it will be done either by the company or by the bank at the company's option. If the company repossesses appliances and desires to own them for purposes of resale, it may do so by paying the bank the pre-determined value of such appliances, as set forth in a formula in the con-

This article appeared in the December 23, 1944, issue of "Electrical World" and in the March, 1945, issue of "Banking" a journal of the American Bankers' Association. The author is a past chairman of the A. G. A. Accounting Section.

tract, based upon the depreciated value of the appliances in question. Otherwise, the bank may repossess such appliances and own them and the company has nothing to do with it.

If requested, the bank agrees to sell to the company for the amount of the unpaid balances any agreement it has purchased, returning the original agreement upon receipt of payment. The purpose of this provision is to enable the company to deal with its customers at all times in a manner best suited to maintain good public relations. Some customers will want to return appliances because they can no longer use them, and will wish to be relieved of the commitments made. Others will want to exchange appliances, before full payment, for larger or newer models. Then too, collection action may lead to new credit terms with customers before such time as six monthly installments are unpaid. For these reasons, the company has the right to purchase such balances from the bank and to re-sell them later under new agreements. The bank will also re-assign and deliver to the company the original agreements when accounts are paid in full or when they become uncollectible.

When discounts are allowed for full payments before maturity dates, these amounts will be absorbed by the company because the company benefits when such outstanding balances are paid, as it no longer has to pay a financing charge. Credits or adjustments allowed customers for policy reasons or because of defective appliances obviously must be absorbed by the company and not by the bank.

The company will furnish the bank such additional reports as may be required by the Bank Commissioner of Connecticut. The company will also furnish the bank, annually, a certificate from its public accountants showing the result of their examination of the balances, or a report concerning the efficiency of the company's system of internal control relating to such balances. The bank will be permitted to examine the records maintained by the company at any reasonable time. The agreement made between the company and the bank will be subject to review upon written request of either party. The agreement may be cancelled upon three months' written notice but, if cancelled, all terms and conditions shall remain in force with respect to transactions occurring prior to the cancellation date.

From this brief description of the plan, it will be noted that the bank will have little bookkeeping to perform, which enables the bank to name an attractive financing charge. The plan will be started at an early date and no difficulties are anticipated in its operation. This plan goes a long way toward solving one of the problems that has arisen in connection with the merchandising business, namely, the provision of funds to finance such transactions, which under the new plan will be furnished by the bank whose proper function it is. At the same time, it preserves for the company the contacts with its customers who will continue to do business in respect to sales with the company, the same as heretofore. The amount of bookkeeping and collection work to be done by the company will be practically the same as under the old arrangement whereby the company was required to furnish the funds.

Letters

● A group of secretaries was consulted and asked to criticize the technique employed by those who dictated letters to them. The following list represents these criticisms, which can be pondered with profit by all who dictate:

1. Dictator should never allow his voice to fall at the end of a sentence.
2. Straight tone is better than one with inflections.
3. Don't go too slowly—phrase if possible.
4. Don't go too fast.
5. First think out what you want to say and follow the thought through.
6. Speak distinctly—especially if dictating into a dictating machine.
7. Watch your secretary for her rate of speed.
8. Don't get up and wander around the room. The voice does not carry clearly from all parts of the room.
9. Don't drum on the desk or do anything to distract the attention of your secretary.
10. If possible, dictate an entire paragraph before asking your secretary to read it back.
11. In using rare words, spell them out for the secretary. A dictionary should be used whenever in doubt and one made accessible on the desk of each stenographer and secretary.
12. Use clear-cut, simple sentences.
13. Realize that, for every hour of dictation, from two to three hours of transcription are required. Don't expect the impossible of a secretary.
14. Don't hesitate to ask for rough drafts of important letters.

Benjamin R. Haynes

Natural Gas Hearings Postponed by FPC

THE Federal Power Commission announced Mar. 25 its order postponing, until late summer or early autumn, the series of hearings in the principal natural gas producing regions of the country scheduled to begin on May 1 in Kansas City, Missouri, pursuant to the Commission's nationwide investigation of the conservation and utilization of natural gas.

The commission adopted the order after being advised by representatives of the conservation authorities of Kansas, Louisiana, and New Mexico, which are in course of preparing evidence on natural gas reserves, conservation practices, gas utilization and related matters for presentation at the hearings, that the postponement is desirable in order to afford adequate time for the presentation of such evidence.

Hasbrouck Appointed E.E.I. Accounting Director

H. C. Hasbrouck

APPOINTMENT of H. C. Hasbrouck to the newly created position of accounting director of the Edison Electric Institute has been announced, effective March 1. His principal work will be in the co-ordination of activities of the several accounting committees of the Institute, and as consultant on accounting and regulatory matters.

Graduating from Cornell University with the degree of A.B., he was assistant to the University registrar for about four years and then became a member of the staff of the New York Public Service Commission for the Second District in its Division of Statistics and Accounts, later becoming deputy chief accountant, in charge of the accounting and statistical work of the Albany Office of the Commission.

His work from 1921 to 1942 was chiefly that of a consulting accountant for the central management of the Associated Gas and Electric System, and he also served at various times as an officer or director of a number of system companies.

Mr. Hasbrouck has been active in association and committee work for twenty-five years. For several years he was chairman of the Committee on Uniform Classification of Accounts both of the National Electric Light Association and the American Gas Association. More recently he was chairman of the American Gas Association's Committee on Depreciation Accounting, which was organized primarily to work with the Depreciation Committee of the National Association of Railroad and Utilities Commissioners. He was also a member of the Edison Electric Institute's Depreciation Committee.

Mr. Hasbrouck is a vice-president of The Technical Valuation Society, a professional organization made up of persons interested in engineering, accounting, and economic aspects of property valuation.

Argentina Takes Over British-Owned Utility

REPRESENTATIVES of the Argentine government formally took possession March 5 of British-owned Primitiva Gas Co., which has served Buenos Aires nearly a hundred years.

The management published a farewell message to clients wherein it stated it refrained from opposing the expropriation and said it was limiting itself to appealing in the courts against the indemnity offered.

The government originally deposited approximately 4,000,000 pesos compensation which it subsequently was obliged to increase to 17,000,000, but the company maintains the property is worth at least double that amount.

Home and the Gas Range Still Aim of Women War Workers

BY ELIZABETH BOTHWELL

Food and Household Editor, Fawcett Publications

Elizabeth Bothwell

WHETHER or not the tens of thousands of women working in war plants will go back to their homes, you can be sure they are never going back to the old household appliance and equipment they were satisfied with in the past. For whether they work or not, the home will always be the most important center of every woman's life. The postwar housewife is going to have to do her own housework, and the war has taught her how easy it is to do automatically some of the things she once thought had to be done by her own two hands. Since the postwar housewives will do their own housework, it is only natural that they are going to become fussier than ever about the quality and performance of the home equipment which they have.

Recently you have heard a great deal of talk to the effect that American women are leaving their homes—that they have lost all interest in cooking and housekeeping. The can opener and Sunday dinner from the delicatessen have come to typify what most men at least, seem to agree is the average woman's idea of heaven. Nothing is further from the facts. The American woman has just as keen an interest in her home and is just as good a housekeeper as her mother and grandmother were before her.

Frankly, all this talk about women leaving the home worried me a lot. Being a woman myself, I just couldn't believe that the age-old love of home had given place to a whole new philosophy. Human nature just doesn't change that way. And so we made a survey among our readers to find out just what women were thinking about, and what they were planning to do after the war. We found that among the readers of "True Confessions" magazine, 72.4% were married, and most of them, 59% of total readership, had one or more children. Somewhat to our surprise we found that 68% do all or some of their own baking and that 52.9% do home canning. Even more surprising in this day when many children take lunches to school with them and when most husbands eat lunch downtown, 43.9% of the women interviewed cook three meals a day.

When you look at figures like these, it is not hard to see why these postwar homemakers are going to want and demand the most modern ranges, refrigerators, washing machines, and other household appliances. The only question in these women's minds is how they are going to be sure they are going to get the greatest convenience and the finest performance from the appliances they have been saving War Bonds to buy. That is where trade names and buying guides come in. Almost without exception, the women we surveyed are going to look for brand names and accepted buying standards, and the manufacturer who gives her these buying standards is going to be justly rewarded for his efforts.

"CP" Buying Guide

What seems to me to be one of the most interesting and practical buying guides that women are going to have after the war, is the "CP" seal on gas ranges. For here is a trademark that not only guarantees the consumer against being "stuck," but also guarantees Mrs. Housewife that she will be buying the best.

This is just the kind of a program we women would like to see set up for every product we buy. For here, more than twenty of the leading manufacturers in the gas range business have gotten together with home economists and cooking experts to create standards for what they believe is the finest cooking appliances it is possible to build. And then they have insisted that these gas ranges be pre-tested by unbiased laboratories to make sure they meet these requirements.

I think this is a grand idea. In fact, it is just like having a board of cooking experts and home economists going along with a housewife when she buys a new range. It is something I wish every industry would follow. It is a sort of guarantee that the housewife is going to get everything she wants in an appliance. Best of all, it means that she can still pick and choose from the various models made by any of these manufacturers and still be sure that she is getting the range that cooking experts designed. All she has to do is to look for the "CP" trademark of the Association of Gas Appliance and Equipment Manufacturers in addition to the manufacturer's own brand name.

And Mrs. Housewife is going to be willing to pay for that kind of service, too, if you show her what it means to her.

Public Utilities Fortnightly

"Did the course do any good? Say, I can cook a better dinner out of my sister's garbage than she can with the original food!"

THESE 20 MANUFACTURERS ARE IN ON
THE SOUNDEST IDEA IN MAJOR APPLIANCE HISTORY
CP
BACKED BY A $12,000,000 GAS-INDUSTRY NATIONAL PROMOTION CAMPAIGN
GAS. THE WONDER FLAME FOR MATCHLESS COOKING

The "CP" seal is going to be a potent factor in postwar buying. Here is one of the current advertisements which tell the story of "the soundest idea in major appliance history" in eighteen publications

New Manual for the Design of Warm Air Heating Systems

A NEW Code and Manual for the Design and Installation of Warm Air Winter Air Conditioning Systems was issued in December 1944 as a publication authorized by the Installation Codes Committee of the National Warm Air Heating and Air Conditioning Association, 145 Public Square, Cleveland, Ohio. Issued as Section No. 7, it is the first of a series of booklets which will eventually cover the entire field of warm air heating.

This manual proposes a radical departure from methods and designs previously used and is the result of a number of years extensive research and collaboration by the association's committees. Every effort will be made to secure compliance with these requirements and to encourage the adoption of the various methods proposed by all heating contractors. In fact, the material includes a suggested ordinance which is intended to provide reliable methods for the design and installation of warm air winter air conditioning systems for buildings having heat losses not in excess of 150,000 B.t.u. per hour.

The recommendations and tables in the new Code and Manual greatly simplify the methods of selecting air heating and distribution equipment. The sizes of fittings and registers given in the new tables are accepted standards of the National Warm Air Heating and Air Conditioning Association and have been approved by Warm Air Heating Industry's Committees.

Comfort air conditioning is defined in the Guide of the American Society of Heating and Ventilating Engineers as: "The process by which simultaneously the temperature, moisture content, movement and quality of the air in enclosed spaces intended for human occupancy may be maintained within required limits." Section 7, Code and Manual, suggests practical ways of accomplishing these objectives.

The Code and Manual is intended to cover residential structures and small non-residential structures having estimated heat losses not over 150,000 B.t.u. per hour and for furnace-blower combinations which have the following performance characteristics:

a. Temperature rise through furnace not in excess of 100° F.

b. Static pressure available for overcoming pressure loses in distribution system of 0.20 inches H_2O.

The thirty-nine-page manual shows recommended sizes of equipment, B.t.u. ratings, and suggested installation procedures. It is profusely illustrated covering typical combinations of building construction and equipment likely to be encountered.

Copies of the manual are available from the National Warm Air Heating and Air Conditioning Association at 50¢ each. In view of the effort behind the adoption of this manual by all heating contractors it practically becomes a necessity for every gas heating engineer to have one. In that connection, the American Gas Association is cooperating in the matter of Table 4 on the selection of furnace sizes. As presently written, this table seems better adapted for the selection of coal and oil furnace sizes than it does for gas furnaces. The sizing basis leads to smaller units than have generally been recommended by gas companies. However, the new and smaller sizes suggested by the use of Table 4 may be adequate in view of the liberal sizing of ducts, fittings and registers when the manual is followed. This leads to greater delivery of heat units into the rooms and consequently somewhat less reserve capacity may be required. In any event, there is a margin of 18% between the minimum bonnet rating and the register delivery.

Attention is directed to Table 1 in the beginning of the manual. This establishes the outside design air temperatures to be used for estimating heat losses. This Table 1 does not yet include a very large number of cities and it may not truly reflect the design temperatures in most common use even in those communities which are listed. All gas companies are invited to send information on this point to Professor S. Konzo, Department of Mechanical Engineering, University of Illinois, Urbana. He has indicated that in the next printing of the manual (the original issue is limited in number) it will be possible to lengthen the list of cities for which outside design temperatures is shown and to correct the temperatures wherever they are in error. This further cooperation on the part of the gas industry will certainly be most helpful in making the new Code and Manual the most authoritative basis for the design and installation of winter air conditioning systems.—C. G. S.

Cookery

● Gas cookery demonstrators should now be celebrating the centenary of their craft, according to the British Commercial Gas Association. The first full-dress gas cooking demonstration was given at the Mechanics' Institute in Leicester more than 100 years ago. A number of ladies were admitted, but the demonstrator was a man—James Sharp, of Northampton. It was no fancy demonstration either. Mr. Sharp cooked a salmon, a plum pudding, some bacon and a fowl, all in a steamer; he also roasted a leg of mutton. He boldly forecast a time when the housewife would put her dinner in a gas oven and leave it to cook itself.

Radiant Heating Working Manual

THAT gas-fired boilers have been the predominant choice to date for radiant heating systems in the residence field is revealed in the new handbook, "Byers Wrought Iron for Radiant Heating," just issued by A. M. Byers Company, Pittsburgh.

Chief purpose of the 52-page book is to serve architects, engineers, heating contractors and plumbers as a working manual. Detailed procedure is listed for figuring heat losses and piping requirements, designing the coils, supply and return mains. Factual data is presented on the relative merits of locating the coils in floor and ceiling. Included is a full page drawing of a floor-type radiant heating system for a representative industrial building in which both sinuous coils and grids are used to advantage.

Reported to be one of the most complete manuals on radiant heating ever published, the book records in picture and text 23 typical installations covering a wide range of structures, including churches, medical buildings, libraries, taverns, factory buildings, office buildings, and residences.

In addition to chapters on the theory, history, and achievements of radiant heating in more than a thousand installations functioning in the United States, the handbook devotes 12 pages to answering the 34 questions that technical men have asked most frequently during the past seven years at lectures on radiant heating and in letters to the A. M. Byers Company.

COOK WITH GAS

Cook with gas, St. Peter said,
Other ways are out of date.
Only thou who use this fuel
Know the way thro yonder gate.

Wood and coal, didst say thou burnt?
Instantly then thou must go
To that place where both are used,
Here he pointed down below.

Good men in this land so fair,
And thou wouldst to Heaven pass,
Save thy wife, her time and care,

COOK WITH GAS

—*Natural Gas Journal*, June, 1911.

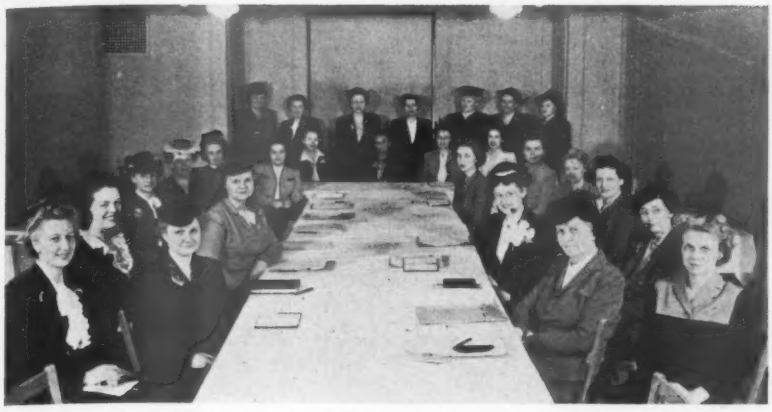
Practically Perfect

THE EAST OHIO GAS CO., Cleveland, has been using large newspaper space to tell everybody in and around Cleveland that:

"Where there's a choice . . . . 98.3% of Cleveland Homes Cook With Gas."

"Where there's a choice . . . . 96.5% of East Ohio's Homes Cook With Gas."

Home Service Committee Maps Program



The A. G. A. Home Service Committee meets in Chicago, March 14 and 15. In the picture are, front row, left to right: Ella L. Lambert, Milwaukee; Julia Hunter, Dallas; Margaret Andersen, Grand Rapids; Jessie McQueen, American Gas Association; Colleen Fowler, chairman, Kansas City; Ruth Sheldon, Washington, D. C.; Joan Huck, Cleveland; Ada Harbaugh, Joplin, Missouri; Mary Hall, Elizabeth, New Jersey. Rear row, left to right: Margaret Holloway, Baltimore; Vivian Marshall, New Orleans; Mary B. Burnett, Cincinnati; Susan Mack, Boston; Kathryn Barnes, Pittsburgh; Lillian Dunbar, Cambridge; Margaret Crooks, Rock Island, Illinois; Mildred Clark, Tulsa; Fay Rudolph, Evansville; Irene Hickey, Detroit; Florence Windecker, Mansfield, Ohio; Rita Abbruzzese, Poughkeepsie, New York; Jeannette Campbell, Minneapolis; Irene Muntz, Rochester; Ruth Soule, Brooklyn; Mercedes Bates, Los Angeles; Cephalie Lewis, Atlanta; Hulda Ungericht, Columbus, Ohio

IN lieu of two of the Home Service Regional Work Shops originally planned by the A. G. A. Home Service Committee this year, Colleen Fowler, chairman of the committee, called a two-day committee meeting which met in Chicago, March 14 and 15.

The program was divided into three parts: discussion of committee projects to be prepared as printed reports; discussion of problems immediately at hand, such as promotion of the 1945 Victory Garden and food preservation program; and subcommittee discussions of future projects.

Policies affecting the promotion of kitchen planning as it affects home service were reviewed in a "Questions and Answers" feature. Experts answering the questions included Mrs. Virginia Hart of Servel, Inc. and Harry Swenson of The Peoples Gas Light & Coke Company, Chicago. Creative cookery and ways of stimulating the use of rationed foods were outlined by Esther Latzke of Armour & Company in Chicago.

Committee projects and the chairman of each are:

"A Home Service Training Course Within the Company," Jeannette Campbell, Minneapolis Gas Light Company.

"A Handbook on Home Service for High School and College Students," Hulda Ungericht, The Ohio Fuel Gas Company.

"Modern Kitchens for Homemaking Instruction," Ruth Sheldon, Washington Gas Light Company.

Discussions in the subcommittees included; projects for study in work simplification; home service use of commercial materials and literature; home service publicity in house organs and magazines.

Pacific Coast Home Service Meeting

GAS industry home service—past, present and future—was given thorough canvassings at a two-day "Home Service Work Shop," held at the Southern California Gas Company, Flower Street building in Los Angeles, February 28 and March 1.

Present at the meeting, which was sponsored jointly by Home Service Committees of the American Gas Association and the Pacific Coast Gas Association, were representatives from gas companies in California, Oregon and Washington. Practically the entire home service staff of Southern California Gas Company was in attendance at the sessions during the two days.

Mercedes Bates, home service supervisor, Southern California Gas Co., and chairman of P.C.G.A. Home Service Committee, presided.

Featured on the first day's program was an address of welcome by W. M. Jacobs, general sales manager, Southern California Gas Co., a report of A. G. A. home service plans and activities by Colleen Fowler, A. G. A. Home Service Committee chairman; a discussion of home service postwar plans; and a talk on sales training by R. C. Terradell, supervisor of sales training, Southern California Gas Co.

Katherine Rathbone, home service supervisor, Southern Counties Gas Company, was the speaker at the luncheon on February 28, giving an address on the subject of home service "refresher courses."

The second day's program included talks by Marguerite Fenner, Pacific Gas and Electric Company; Frank Moon, J. L. Hall, R. D. MacMahon, and W. M. Jacobs, Southern California Gas Company; Aline Law, editor, *Sunday Times Home Magazine*; Iris Albert, Los Angeles City Schools; and Ruth Kruger, Central Arizona Light and Power Company.

Speaker at the luncheon on March 1 was Genevieve Callahan, food consultant, who talked on "Techniques of Promotion Materials for Home Service."

Tappan "E" Renewed

A THIRD renewal of the coveted Army-Navy "E" flag to the Tappan Stove Company, has been announced by Paul R. Tappan, president, following receipt of a letter from Admiral C. C. Bloch, chairman of the navy board for production awards.

The first star was awarded the Tappan firm on Dec. 13, 1943 and the second star on June 16, 1944.

"Servel News" Wins Recognition

FOR the second time in three years the "Servel News," a magazine published by the advertising and sales promotion department of Servel Inc. was awarded top honors in the annual contest of the Industrial Editors Association.

This association annually honors the 25 top magazines in five different classifications. The "News" shared recognition in the external magazine classification with the "Phoenix Flame" published by the Phoenix Metal Cap Company and "Telephony" published by the Telephony Publishing Company.

The "Servel News" is published under the supervision of R. J. Canniff, advertising and sales promotion manager for Servel, and is edited by William A. Rorison.

During the past year the "Servel News" has carried on a special postwar planning section for executives of gas utility companies and has featured such subjects as: salesman selection, kitchen planning, market surveys, and dealer-cooperation plans.

William A. Rorison (right), editor, "Servel News," shows R. J. Canniff, advertising and sales promotion manager, the first-place award won by the Servel publication

It's Your Advertising—Why Not Use It?

BY JOHN D. KEANE

Ketchum, MacLeod & Grove, Inc., Pittsburgh, Penn.

ASSOCIATION advertising by many groups in industry, business and agriculture has been steadily growing for the past 20 years. You have all seen it in one form or another, promoting agricultural and manufactured products and services such as transportation and hotels. One of the oldest and most consistent association national advertisers has been the American Gas Association, whose industrial and commercial gas campaign has, except for one year, been running continuously since 1926.

We are particularly concerned here with the problem of getting the most into and out of this advertising which is conducted by the National Advertising Committee of the Industrial and Commercial Gas Section. The expenditure on this advertising, in any individual year and accumulatively over a period of years, amounts to a substantial amount of money. This money, of course, represents the subscriptions of individual gas companies. In turn, it comes from the revenues of these companies which are realized through the service and salesmanship of management and employees.

Companies Benefit in Real Sense

Therefore, in the very fullest sense of the word, the Industrial and Commercial Gas advertising of the Association is *your* advertising. Aside from the fiscal angle, it is your advertising in the very real sense that it is out in the field selling industrial and commercial gas to business and industry on a national scale. Each company benefits locally from this advertising because the publications in which it appears are read locally by desirable customers and prospects for industrial and commercial gas. Your national advertising is in effect an advance salesman who calls on business leaders and industrialists in your community regularly; generally more often than your own salesmen or representatives can get around to them.

Your national advertising is a means too of announcing in important quarters improvements and advances in gas equipment and gas heating processes, or of showing your customers and prospects how other business men and industrialists have effected savings or improved their products through the use of gas. These testimonials encourage customers to look into the possibilities of new or improved gas equipment.

Prepared for presentation at 1945 A. G. A. Conference on Industrial and Commercial Gas.

It is the constant aim of the committees and advertising counsel concerned with the industrial and commercial gas advertising to make this advertising as excellent as possible. In this effort, gas company and appliance company personnel can be of considerable assistance by their contribution toward what goes into this advertising. This is possible through the collection and forwarding to the Secretary of the Section case histories or reports on interesting installations in business or industrial establishments. Most of you are familiar, no doubt, with the Guidance Sheets formulated by the National Advertising Committee of the Industrial and Commercial Gas Section. These forms make it comparatively simple to report the story of an installation and have already resulted in a number of excellent advertisements. Copies for either industrial or commercial coverage can be secured from the Secretary. They are also helpful in taking good photographs.

Executives and personnel of Industrial and Commercial Gas Departments and appliance companies are strongly urged to make the widest possible use of these forms and to forward as many interesting case histories as possible. Whenever a new installation is made where it can be shown that considerable economies are effected, better products turned out or other desirable results accrue, please get a Guidance Sheet and report on it at once.

The customer whose installation may become the subject of national advertising is, almost without exception, only too happy to secure this free and valuable publicity and usually cooperates to the fullest extent.

The only real difficulty encountered seems to be in securing adequate photographs. Here, good judgment must be used. Photographs of the type desired for national advertisements should be close-ups to show an operation or the equipment to best advantage. Individuals going about their regular tasks are desirable in the pictures and it is also important that the surroundings be tidied up so that containers, refuse, cleaning equipment and other extraneous items will not show. And, of course, it is most important that the release form, available with the Guidance Sheets, be signed by all who appear in the photograph. This should be done at the time the photograph is taken as an employee sometimes leaves and it is difficult thereafter to obtain his signature.

Naturally it may not be possible to use every single case history which is turned in, but this should not deter anyone in the least. It is only by the constant and combined efforts of all that a good round-up of outstanding case histories for advertisements can be secured.

Variety in case histories, of course, is extremely desirable and note should be made of the different fields in which the Association's advertising appears. These fields currently are: metals, ceramics, glass, food processing, chemicals, baking, restaurants, hotels, hospitals, institutions, schools and general industrial. It is realized that various territories may not include every particular type of industrial operation, since some types of manufacture are heavily concentrated in certain sections.

Adapt It to Social Use

In addition to being of considerable assistance in helping to formulate good advertisements by sending in case histories, you can also make this advertising more concretely your own by making extensive use of it locally.

It is the aim in preparing these ads to make them smart, attractive, modern, informative and selling. The prestige and importance of the gas industry are kept in mind when these advertisements are drawn up and every detail made as finished and polished as possible.

It is advantageous, therefore, to use national copy in local advertising and promotion, because aside from getting the most for your money, it is good, sound merchandising. You are familiar, of course, with the activities of manufacturers of consumer products who send point of sale material and newspaper mats to local outlets for their own use. These sales helps are used extensively and profitably by the retailer.

Since you are engaged in the merchandising of industrial and commercial gas and appliances locally, you ought to take all advantage possible of the help that can accrue from your national advertising. Don't imagine that each of your customers has necessarily seen the national advertising. Perhaps he has, but one of the best reasons for advertising is the value of repetition and pounding home your sales arguments frequently and aggressively.

The accompanying broadside reproduces

What do You Require
in a fuel for Industrial Heat Treating . . .
Precision Control?
Wide Range of Temperatures?
Adaptability to your Production System
Economy and other Competitive Factors?
Superiority in Intricate Operations?
Public Service
Gas
— What can it do for you?
Worcester Gas Light Company
The military experience with modern GAS EQUIPMENT
will help you after the war!
Northwestern Public Service Co.
Schedules
Southern Union Gas Company
CITIZENS Gas FUEL CO.
Ze Gas ! Does It •
A Good Chef Knows
SUPERIOR WATER, LIGHT AND POWER COMPANY
Rochester Gas & Electric
Victory coal on this one belt!
UNITED NATURAL GAS
with GAS
Richmond GAS Corporation

HOW GAS COMPANIES ARE USING AMERICAN GAS ASSOCIATION INDUSTRIAL AND COMMERCIAL ADVERTISING LOCALLY

AMERICAN GAS ASSOCIATION

INDUSTRIAL AND COMMERCIAL GAS

ADVERTISING FOR APRIL

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full page advertisements will appear in the trade and business magazines listed below during the month of April. These advertisements are prepared in cooperation with the Committee on National Advertising as part of the industry's national advertising campaign.

GENERAL MANUFACTURING

How *GAS* advances the science of heat treating
BUSINESS WEEK (Apr. 21—⅔ page)

Whether Bunsen or "INFRA-RED" Burner—*GAS* is the Superior Source of Heat. MODERN INDUSTRY (½ page)

For a head start on the field . . . Plan on *GAS* when Re-converting.
INDUSTRIAL HEATING

METALS INDUSTRY

For a head start on the field . . . Plan on *GAS* when Re-converting.
THE IRON AGE (Apr. 5) • STEEL (Apr. 30)

Memo to Mr. Post-War Planner:
METALS AND ALLOYS • METAL PROGRESS

GAS-FIRED furnace helps clippers keep busy schedules.
STEEL (Apr. 2)

CERAMIC INDUSTRY

A Powerful Pointer for P.W.P.'s. CERAMIC INDUSTRY

GLASS INDUSTRY

Memo to Mr. Post-War Planner: GLASS INDUSTRY

CHEMICAL FIELD

Memo to Mr. Post-War Planner:
CHEMICAL & METALLURGICAL ENGINEERING

HOTEL AND RESTAURANT FIELD

Nearly 3 million meals a year in this restaurant are cooked with *GAS*.
AMERICAN RESTAURANT

70 Year Old Durgin-Park Restaurant of Boston finds *GAS* speeds service, eliminates waste, provides greater cleanliness.
HOTEL MANAGEMENT • RESTAURANT MANAGEMENT

Washington's New Statler equipped with Complete *GAS* Kitchens.
INSTITUTIONS (Apr.—2/9 page)

SCHOOL FIELD

At Harvard, America's Oldest University . . . *GAS*, the Modern Fuel, Cooks and Bakes for Student Soldiers. NATION'S SCHOOLS

HOSPITAL FIELD

Hospital's Official Praises Results Since Switching to *GAS*.
MODERN HOSPITAL

FOOD PROCESSING

A Powerful Pointer for P.W.P.'s. FOOD INDUSTRIES

BAKING FIELD

Delicious products at the Knopf Bakery require less time and effort with *GAS*. BAKERS' HELPER (Apr. 7) • BAKERS WEEKLY (Apr. 2)

examples of how gas companies in different parts of the country have utilized national advertisements. In response to a request to gas companies for samples of their use of national advertisements locally, several hundred were forwarded. Newspapers as well as local periodicals of an industrial or commercial character were used. Several companies credited the national advertising with basic ideas which were adapted to their local advertising.

Mrs. Alta Ewalt Evans, director of advertising and employee relations, in forwarding copies of Southern Union Gas Company local advertisements, commented: "It is our opinion that the advertising material being provided by the Industrial and Commercial Gas Section is very good and should be paving the way for gas companies to do a bigger and better job in the post-war era which, it is hoped, will be here soon."

You can use an advertisement in its entirety, appending your company's signature to it, or you may prefer to use only the illustration and headline, rewriting the copy to suit local needs. It is particularly recommended that the "trend chart" used in the national advertising be incorporated in your local advertising and other promotion.

How to Do It

There are numerous other ways in which you can use the national advertising locally. You can secure reprints inexpensively and send out a mailing each month to customers or prospects, forwarding an advertisement related to his particular field, with a covering letter. Or the reprints may be used as envelope stuffers in correspondence.

Salesmen should have them in their portfolios. A handy way to do this would be to carry a copy of the monthly "Preprints of National Industrial and Commercial Gas Advertisements" which is sent to each gas company and individual member of the Section. Enlargements of specific advertisements, which can be made locally at little expense, can be placed advantageously in show windows or lobbies, particularly if your offices are located in the major business section of town.

You may be pleasantly surprised to find that local use of your national advertising, besides helping your own sales activity, will be well received by your customer since it shows him, in many instances, how gas can solve some of his own problems or point the way to better, more economical production.

Advertising is after all a sales tool. Your industrial and commercial national advertising is approved by your committees only after careful examination and the belief that each individual advertisement is worthy of the signature of your Association on behalf of the gas industry. Therefore, you will confirm your own good sales judgment by putting these "salesmen in print" to work for you locally as your representatives do nationally.

The first public utility chartered in Texas was a gas company at Galveston which received its charter in a special grant from the Legislature in 1856.

Technical Section

L. E. KNOWLTON, Chairman | LESTER J. ECK, Vice-Chairman | A. GORDON KING, Secretary

Gas Works Installs Water Gas Sets

BY JOHN V. POSTLES

Engineer of Works, The Philadelphia Gas Works Company

IN December of 1944, we put into operation two new mechanical grate water gas sets, at our Station B Plant, complete with waste heat boilers.

The sets were installed in one of the two generator houses at this station not for the purpose of immediately adding generating capacity to the Philadelphia Gas Works but as the first step in a major project of reconstruction and modernizing the older of the two generating plants. The fact that we had them on January 25, our all time big day, was a great help.

Plans for installing water gas sets in this location were made as early as 1907.

The sets consist of the following—

2— 9′0″ inside diameter mechanical grate generators.
2—12′0″ outside diameter carburetters.
2—12′0″ outside diameter superheaters.
2—Waste heat boilers.
2—Wash Boxes.
1—Blower with a capacity of 40,000 cu.ft. of air per minute at a pressure of 75″ of water column.

In addition to the above, there were the necessary air, oil and steam lines, a new 42-inch take-off main to the condensers that not only take the gas from the new sets, but also a portion of gas from the existing three sets.

The new sets differ from our other mechanical-grate sets in that their grate driving mechanism is a simple oil cylinder that turns the grate one step for each stroke of the cylinder. The speed can be varied at will. The old sets are moved by a variable speed motor, whose speed is reduced by reduction and worm and ring gears.

All of this equipment was supplied new for us, excepting the boilers; they had never been used, but were originally purchased for a Government-sponsored synthetic ammonia plant in Alabama, planned but not needed, for the pursuit of the war. They provided one of the early instances of the Government salvaging material purchased for war.

The combined increase in our generating capacity due to the sets and new blower was some seventeen million cubic feet per day and while we would not have been out of gas, had we not had them, on our big day of January 25 when we sent out almost 140 million cubic feet, the new additions helped us very materially.

In addition, the fact that the new sets were self-clinkering was a great relief in that we were short of manpower for such work on our peak days.

Federal Power Commission Reports

THE Federal Power Commission on Mar. 14 issued an 1,180-page buckram-bound volume entitled "Federal Power Commission Reports, Volume III" presenting the opinions and decisions of the Commission from January 1, 1942 to September 30, 1943, with an appendix of selected orders in the nature of opinions. The new volume is uniform with the first two.

It includes a 69-page digest and index and is sold at $2.25 a copy by the Federal Power Commission or by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

Two views of the new water gas sets installed by The Philadelphia Gas Works Company. At left is the operating floor, showing the mechanical generator sets. The other picture shows the shells during construction, before being enclosed by the building

Reinforce Westchester Gas Main by a New Method

After steel casing was installed over hub sleeve of a gas main in Larchmont, men of Westchester's New Rochelle Service finish the job. William Sloan, welder, and Frank Iarrocci, foreman, Gas Distribution Div., plug larger opening through which pitch was poured to fill the casing and second opening that served as a vent during the operation

WESTCHESTER Lighting Company's 20- and 16-inch cast iron gas main between Pelham Works and the Rye Holder Station is undergoing considerable reinforcing and overhauling in order to enable the main to carry an increase in pressure. The Gas Distribution Department has completed the work of clamping the bell joints on this main, and the anchoring of all bends, dripheads and dead ends is under way.

In addition, nineteen cast iron split hub sleeves must be replaced with steel welded tees, since the split hubs would not permit the installation of clamps. The work involved in removing each hub sleeve originally would have included the breaking of concrete pavement to the extent of approximately 25 feet by 4½ feet together with the necessary excavation; tapping of the main; throttling of pressure; cutting; bypassing and removal and installation of fittings. Obviously such extensive operations could not have been performed during the winter or peak season, but would have had to be held over until spring.

To avoid this delay, and also to reduce the cost of the project, an idea was evolved to enclose the old hub sleeve, while in place, with some sort of casing. The department developed an all-steel welded casing with ends equipped for leak clamps. The casing was cut in half longitudinally and rewelded together after the two halves had been fitted over a hub sleeve in the field. The area between the steel casing and the enclosed hub sleeve was then filled with hot pitch to expel the air and prevent future deterioration of materials. The installation of this casing over the hub sleeve was made in an opening only 5 by 5 feet, and the cost of the fabrication and installation, including repaving, amounted to about one fourth of the cost of the former method.

This experiment with the first casing having proved a success, work is progressing rapidly on the enclosing of the other eighteen hub sleeves, and when the job is completed, the main will be capable of carrying the desired increase in pressure whenever needed.

—*Around-the-System*

Gas Production Research Committee Meets

A MEETING of the Gas Production Research Committee under the chairmanship of P. T. Dashiell was held February 21 in New York for the purpose of reviewing gas production research projects under way and making recommendations for work to be supported by the new gas industry fund being administered by the Special Committee headed by Ernest R. Acker.

Much of the discussion centered on gasification research now under way or contemplated at the Institute of Gas Technology at Chicago, including the following projects:

Catalytic Gasification of Propane—"The objective is to obtain, without laboratory work, the maximum amount of information on the applicability to the gas industry for peak load purposes all presently known processes for the catalytic conversion of propane with steam to gas of lower heating value and lower specific gravity."

Catalytic Gasification of Higher Hydrocarbons—"The objective is to obtain from laboratory scale apparatus the information necessary to design full-scale low cost plants for: (a) production of 550 (525 to 575) B.t.u. water gas from propane and steam; (b) production of a similar gas from higher but vaporizable hydrocarbons, including kerosene and gas oil if possible."

Development of Sulfur Resistant Catalysts.

Analysis of Gas Production Equipment and Processes.

A Study of Oxygen Steam Carbon Reaction under Normal and Elevated Pressures.

Pulverization of Coal.

Following a discussion of these projects, during which recommendations were made, Hall M. Henry described the work the New England Gas Association has done to develop information on the economics of supplying the peak loads of house heating. He pointed out that a study representing 60% of the meters in New England revealed that a majority of these companies can serve house heating economically.

F. J. Pfluke, chairman of the Technical Advisory Committee, discussed the work of the Technical Section's Gas Production Committee in developing means of increasing water gas capacity, generator as well as auxiliary. This work, which started last year and is continuing, includes contributions from many of the best known water gas operators.

The Technical Advisory Committee was assigned the task of surveying the various institutions capable of conducting gasification research and recommending amounts to be spent at those institutions for specified studies. A meeting of Mr. Pfluke's committee to carry out this assignment took place March 20 at A. G. A. headquaters.

At the conclusion of the meeting it was brought out that $350,000 is at the disposal of Mr. Dashiell's committee for gas production research. Any funds not spent in the present Association year will be carried over until next year.

To Build Large Gas Holder at Long Beach

CONSTRUCTION of a five million cubic foot telescopic gas storage holder for the City of Long Beach, California, has been awarded to The Stacey Bros. Gas Construction Company, one of the Dresser Industries—and steel erection will start by May 15, it is announced by William H. Partridge, superintendent of the municipal gas department.

The five-lift structure will be the world's largest all-welded panel-type, water-seal gas holder and will provide reserve storage to meet the high peak loads which have resulted from the increased industrial activity in this area.

This will be the first large gas storage holder constructed on the Pacific Coast since 1941, and priorities for the steel and allocation of the restricted materials were obtained from the War Production Board following a thorough investigation as to the essentiality of the entire project.

Organic Sulfur Study Making Progress

DR. E. W. GUERNSEY, Consolidated Gas Electric Light and Power Co. of Baltimore, chairman of the permanent Organic Sulfur Subcommittee of the Technical Section, in a letter to a new member recently described the work of his committee as follows:

"The principal activity of the Organic Sulfur Subcommittee is the assembly and interpretation of data of utility for the development of processes for the economic removal of organic sulfur compounds from gas and for the appraisal of processes which may be offered. The committee is assisted in this work by the Institute of Gas Technology, where active research in this field has been under way under the sponsorship of the committee for almost three years.

"The greater part of the research work has been directed toward the improvement of our knowledge regarding the identity of the specific compounds constituting organic sulfur, and the relative proportions of these

constituents. In particular, the research group has sought to appraise and develop analytical procedures for the determination of the specific organic sulfur compounds, because this has seemed to be necessary as a first step in the better definition of the practical problem of removal of sulfur compounds.

"Within the past year, however, a substantial beginning has been made in the quantitative study of chemical reactions of possible utility for the removal of certain types of organic sulfur, especially carbon bisulfide and carbon oxysulfide, which will probably be found to constitute an important fraction of the sulfur in typical gases.

"A somewhat fuller picture of the program of the Committee and of the accomplishments to date may be obtained by reading the reports of the Organic Sulfur Subcommittee for the years 1942, 1943 and 1944, which are included as a part of the Gas Conditioning Committee reports for those years, and also by reference to the A. G. A. MONTHLY for March, 1943, pp. 118-121, in which the program was originally outlined. You will find additional references to the program in the A. G. A. Proceedings for 1942, pp. 293-295, and in the A. G. A. MONTHLY, January, 1944, p. 45."

To Construct Battery of Coke Ovens

THE Citizens Gas and Coke Utility, Indianapolis, has announced the letting of a contract for the construction of a new battery of coke ovens and a three-unit producer plant to supply oven underfiring fuel, to be built at the Prospect Street Plant.

The new coke oven battery will consist of 47 combination, underjet, by-product ovens and will cost $1,641,000, to be paid for out of accumulated reserves set aside for this purpose.

The construction of a 12 million cubic feet holder in March, 1941 and the addition of a new battery of coke ovens in October, 1941 have made uninterrupted operation possible despite tremendous increases in gas consumption. Compared with 1935, 1944 figures show these increases: Industrial gas consumption is up 600%; a 40% increase in domestic consumers (reaching 108,621 meters in service) resulted in a domestic gas consumption increase of 82%. Total gas consumption in 1944 compared with 1935 was up 140%.

The three-unit producer plant, to be built at a cost of $623,000, will supply low B.t.u. gas for underfiring the new battery and battery "H" built in 1941, both of these batteries being so constructed as to make the burning of low B.t.u. gas possible. A producer plant utilizes the small sizes of coke and produces a low heat value gas, suitable for coke oven underfiring, by a constant circulation of air and steam through a burning fuel bed.

If materials, labor, circumstances and conditions permit, it is expected that the new battery of coke ovens and the new producer plant will be in operation by January 1, 1946.

Crews Practice Emergency River Crossing

ENGINEERS of Southern California Gas Company, Southern Counties Gas Company, and San Diego Consolidated Gas and Electric Company witnessed a demonstration drill by Southern Counties' crews of an emergency pipeline river crossing at Oceanside, March 5.

The regular San Diego Pipeline District crew supplemented by a crew made up of construction and welding foremen from Orange County District, under the supervision of Robert J. Ott, San Diego Pipeline Superintendent, ran a 325-foot emergency span of 6-inch pipe across the arroyo back of the baseball park in Oceanside for this demonstration.

Two portable, completely assembled, sixty-foot towers constructed for the purpose by San Diego Pipeline men from 3-inch pipe were hauled to the scene of action by a truck and dolly and securely set up and anchored for the demonstration. For possible future emergencies one will be kept in readiness at Dana Point—the other at Oceanside.

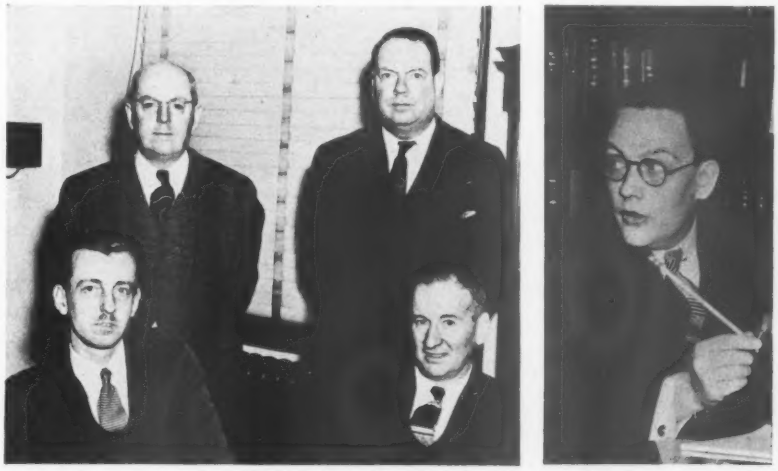
A Lyle gun such as is used by the U. S. Coast Guard in rescue work first shot a ¼-inch manila cord across the arroyo. By means of this cord a 3/16-inch airplane cable was next pulled across. Then a ⅜-inch guide cable and a ¾-inch supporting cable were pulled across by the lighter airplane cable.

From the tops of the two towers the heavy ¾-inch cable was then strung across the imaginary swollen stream and pulled fairly taut. Vertical cables suspended from hook pulleys were then run out on the heavy horizontal cable at 40-foot intervals. At the lower end of each of the vertical cables a "thimble" or end-loop made of a short section of 8-inch pipe had been attached.

Through these suspended thimbles the 6-inch, pointed-end pipeline was then pulled across the stream. The ⅜-inch guide cable, which had been threaded through the thimbles, was used for this heavy load.

With the equipment used in the demonstration the crews can span crossings up to 600 feet.—*Southern Counties Gas News.*

Attending the joint Production and Chemical Program Committee meeting held in New York, February 20, were C. C. Russell, chairman, Carbonization and Coke Subcommittee; F. W. Hartzell, past chairman, Water Gas Subcommittee; J. Hawley Taussig, chairman, Water Gas Subcommittee; R. Van Vliet, chairman, Gas Production Committee; and J. S. Haug, chairman, Subcommittee on Survey of Gas, Coke and By-Product Making Properties of American Coals



Sitting—Dr. C. W. Wilson, chairman, Chemical Committee and W. R. Fraser, vice-chairman. Standing—J. Gordon Sweeney, Chairman, "Wrinkles" Subcommittee and R. F. Tenney, chairman, New Developments Subcommittee. At right is the late Dr. Stephen P. Burke, chairman, Subcommittee on the Use of Oxygen in Gas Manufacture, who died suddenly March 10

Laboratories

GEORGE E. WHITWELL, Chairman R. M. CONNER, Director W. H. VOGAN, Pacific Coast Supervisor

New War Contracts Under Way at A. G. A. Laboratories

AIDING particularly the stepped-up Pacific offensive of the United Nations in the renewed drive to meet urgent war equipment needs, the American Gas Association Testing Laboratories are now making deliveries to the Army Air Forces of an improved type of automatic, continuous flow oxygen regulator for use in troop transport planes.

The regulators, designed and engineered cooperatively by the Laboratories and Alar Products, Inc., supply oxygen to airborne personnel at high altitudes such as those encountered in flying over the famed "hump" of Indo-China. Previous experience in supplying the original design under an earlier contract made it possible for the Laboratories to undertake their new assignment in a minimum of time. Technical changes and refinements incorporated in the present model have resulted in improved performance and at the same time have been engineered so that complete interchangeability of parts with the previous design is possible, thus simplifying maintenance and servicing in the field.

In addition to the contract for these regulators, a second is being handled for the reinspection and retesting of regulators that have been in storage for one year or more. In preparation for both contracts it was necessary to design and construct equipment and facilities for testing and inspection and to train new personnel. New test benches for oxygen flow and for leakage were built and a new cold box designed for application of additional tests which call for performance checking under more severe operating conditions than was previously specified.

Through preparation of facilities and training of personnel for the reinspection contract, the Laboratories were able to start work on the new type regulator without delay, new designs and drawings having been prepared in advance. Likewise completed are a new service handbook and installation instructions for use of airforce personnel. Reports from former employees now in military service, who have seen these oxygen regulators in use, indicate that they are performing a vital function in the air of which we may well be proud.

A. G. A. Oxygen Regulator "Aero Digest" Feature

AN illustrated article entitled "Continuous Flow Oxygen Regulator for High Altitude Flying," describing the equipment developed and manufactured by the American Gas Association Laboratories at Cleveland, was a feature of the March 1 issue of *Aero Digest*, a national publication reaching the aviation engineering field. Author of the article is H. J. Hense, of the Laboratories' staff.

Two Laboratories Engineers Promoted

Kendall H. Flint

Herbert Luoma

PROMOTION of Kendall H. Flint and Herbert Luoma of the American Gas Association Testing Laboratories to the positions of chief engineer, industrial gas research and chief engineer, domestic gas research respectively, has been announced by R. M. Conner, director. At the same time all experimental and development work of the War Products department was placed under Mr. Luoma's supervision.

These promotions place the Laboratories in an excellent position to carry out their part in the newly-expanded research program of the American Gas Association, automatically intensifying the emphasis on research throughout the industry. Recognition is also extended to experienced men who have carried out direct supervision of both gas industry and war products research during the past several years and played important roles in the accomplishments of the Laboratories in these fields.

Mr. Flint has been associated with the Laboratories for nearly twenty years and in that time has held responsible positions in every phase of their activities, having been connected with testing, inspection and research endeavors. He is a graduate of Amherst College and obtained his master's degree from Massachusetts Institute of Technology in the field of chemistry. All research activities pertaining to industrial gas, air conditioning, approval requirements and mixed gas will be conducted under his supervision.

Mr. Luoma joined the A. G. A. staff in 1939 following his graduation from the University of Wisconsin as an electrical engineer. He also has been connected with many phases of Laboratories' activities in testing, inspection and research, including three years at the Los Angeles Branch. For the past three years he has played a dominant role in the development of war products for the Army and Navy and the Office of Scientific Research and Development. As assistant chief research engineer he supervised experimental war contracts, a program which resulted in the development of fire control devices and automatic, continuous flow oxygen regulators for transport planes together with a number of other similar accessories.

Mixed Gas Research

THE Mixed Gas Research Committee, a joint committee of the Natural Gas Department and the Technical Section, is submitting to the gas industry for criticism new mixed gas research data, preparatory to publication of the findings in bulletin form.

Latest studies conducted by the American Gas Association Testing Laboratories' staff under the sponsorship of the committee encompass substitution of gases with heating values ranging from 800 to 1800 B.t.u. per cubic foot for three different base natural gases of high heating value, high methane content, and high gravity combined with high inert content, respectively. New interchangeability equations have been developed which take into consideration flash-back, lifting and yellow tip limits of adjustment and substitute gases. Mathematical methods of determining these characteristics limits have also been outlined. Graphical interpolations of formula factors, formerly complicated and time-consuming in calculation, will make possible complete solution of equations with nothing more than simple addition.

These new data when published will supplement previous mixed gas research studies on base manufactured gases to include mixtures of higher heating values as well as utilization of butane-air and mixtures of butane and city gases to meet fluctuating demands.

Testing activities in range room following rehabilitation

Laboratories' Restoration Makes Progress

PHYSICAL rehabilitation of the American Gas Association Testing Laboratories in Cleveland is well under way according to R. M. Conner, director. He points out that numerous preliminary steps necessary before reconstruction could be started were completed more rapidly than had first been anticipated.

In spite of present shortages in materials and scarcity of labor, repairs are well advanced and are nearing the stage when the offices which were completely destroyed can be reoccupied. In the meantime temporary quarters made available through the courtesy of the ASH&VE Research Laboratory have been utilized by the office staff.

In view of the extensive damage suffered by the north wing of the building, it is considered remarkable that testing and research activities have been able to be resumed on their present scale. Fortunately the portion of the building housing war operations was little damaged by comparison so that these activities could be resumed on a full scale shortly following the fire. In addition to the offices, the range, central heating and accessory rooms, as well as the chemical laboratory, were all very severely damaged. With the exception of certain test and inspection records, correspondence and other files were completely destroyed.

"The splendid cooperation of all concerned have made the rebuilding task an easier one," Mr. Conner said. He was particularly appreciative of the assistance extended by President Robinson and The East Ohio Gas Company, without which reconstruction would have been greatly delayed.

Production testing of automatic oxygen regulators at A. G. A. Laboratories

The principal portion of damaged testing and research equipment has been either replaced or repaired. All gas, water and compressed air lines in the various test sections have been put back into service. New colored concrete floors have been laid in the portion of the north wing housing the test section and windows throughout the building replaced as necessary. Heating and plumbing facilities as well as electrical and telephone conduits destroyed by the fire have been restored.

While plastering of the offices has been finished, partitions still remain to be installed before quarters can be occupied as formerly. Extensive replacement of face brick on the two walls of the north wing, directly exposed to the fire, will likewise be necessary. This, together with other outside work, such as resurfacing of drives, restoration of fences and gates and planting of shrubbery, still remain to be completed.

KITCHEN VENTILATION RESEARCH

(Continued from page 160)

effective in removing moisture from the front burners and was reasonably effective at rates as low as 170 cfm. The wall-type hood was least effective in removing moisture from the front burners—55 per cent at 300 cfm. The cabinet-type was reasonably efficient—70 per cent at 300 cfm. The latter value could be increased to 84 per cent by the use of an auxiliary opening 2 x 24 in. just below the ceiling level.

Certain cooking odors are much more difficult to remove than either moisture or heat. This is understandable even though the odor particles are present in very small quantities. A relatively small number of particles that have diffused throughout the room usually are sufficient to impart a noticeable odor to the atmosphere. It is obvious that very high rates of air withdrawal would be required to entirely remove certain odors from any given room.

Many cooking odors might be considered desirable when confined to the kitchen. The real problem is to prevent the diffusion of odors from the kitchen into other spaces in the house. It was found possible (with a 300 cfm rate of air withdrawal) to retain within the kitchen practically all odors produced by cooking of most foods when the inlet air was drawn through the kitchen door. Of course, all odors produced by cooking foods such as cabbage, cauliflower and onions could not be entirely confined to the kitchen but were diluted to an acceptable degree in adjoining rooms.

Odors from roasting meat in the oven could be almost completely removed

from the kitchen with any of the three types of hoods studied. None of the ventilating hoods were effective in entirely removing pronounced cooking odors produced from preparing foods over the top burners. The canopy-type hood was the most effective but even so, required very high rates of air withdrawal for best results.

From information obtained to date, it appears that the effectiveness of ventilating a kitchen from the standpoints of removal of excess heat, moisture and cooking odors is highly dependent upon the rate of air withdrawal. Results of tests indicate that, based on the assumption that 300 cfm is the maximum practical rate of air withdrawal, a cabinet-type ventilating hood offers good possibilities from the overall standpoints of appearance, performance and simplicity of design and installation. Removal of moisture is comparatively easy since practically all moisture produced by rear top burners and oven can be removed with any of the three types of hoods studied. With the cabinet-type hood removal of approximately 70 to 80 per cent of the moisture produced by the front top burners can be effected.

Although all odors cannot be removed from the kitchen even with very high rates of air withdrawal, proper ventilation aids materially in confining odors to the kitchen.

Aside from the studies made to date, two additional factors should be borne in mind, namely:

1. Although hood ventilators do not instantly remove all heat dissipated by cooking operations, at least they cause a deflection of heat away from the person standing near the range or elsewhere in the kitchen, while conventional type ventilators may cause the opposite to happen.

2. Likewise, hood ventilators have the important advantage, not normally possessed by conventional fans, of preventing the release of grease-laden vapors into the kitchen thereby eliminating the necessity for substantial upkeep of wall and ceiling surfaces.

This outline should be viewed as a presentation of preliminary findings some of which are not as yet conclusive. Only a limited number of ventilator designs have been tried as the initial purpose of this study was to assemble basic information rather than to develop specific designs.

JOB RATING AND ANALYSIS

(Continued from page 154)

equal or higher than the prevailing rates in the community, one of the major sources of labor strife is removed.

It is important to remember that workers, regardless of their position in a company, are at least as much (if not more) concerned with the relative rates of pay for their job as they are with the absolute amount of money they receive. A man may not be concerned so much about the fact that he receives, say 86 cents per hour, as about the fact that an apparently less difficult and important job within or without the organization pays more than 86 cents. Job evaluation can do much to eliminate such inequalities.

Conclusion

The material presented is only an outline, touching very briefly on the assigned subject. Job classification plans were prepared as early as 1910 for employees of the City of Chicago and Commonwealth Edison Company used job classifications in the application of salary adjustments. The results of this work were published in 1912, and since that time much has been contributed. Books have been written on these topics and considerable time and money has been spent by large corporations for their own research in job evaluation work.

The subject is of interest to this group as we are interested in those things that contribute to satisfactory employer-employee relations. Any company that will take time to list its job classifications and write the specifications for these jobs will find in so doing they have provided an excellent source of information about their own company and cannot help but be impressed with some inequities and inequalities that exist between jobs.

The advantages of job study will be immediately reflected in the foreman and supervisory personnel, as they will have a better understanding of wage differentials and differences that exist in various job classifications.

Your committee has not suggested, nor does it recommend any set pattern or procedures as standards. Although we are all associated in the gas industry, organizational differences exist that will defeat any attempt at standardization.

It is the recommendation of the committee, however, that each individual company set up its own forms to meet its specific requirements. In the selection of work forms and record forms, be sure to design a form that will have some elasticity to fit the nature of the company and its work.

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Byproduct and Beehive Coke in 1944

PRODUCTION of byproduct and beehive coke in the United States in 1944 advanced to a new record of 73,618,000 net tons, according to preliminary figures compiled by the Bureau of Mines, United States Department of the Interior. This was an increase of 3 per cent over the previous record output of 1943 and 29 per cent higher than 1940, the last full year of peacetime production.

The gain over 1943 is attributable to the increased output from byproduct ovens.

The Eagle

● When God made the oyster, He guaranteed him absolute economic and social security. He built the oyster a house, a shell, to protect him from his enemies. When hungry, the oyster simply opens up his shell and the food rushes in.

But when God made the eagle, He said, "The blue sky is the limit. Go build your own house." And the eagle went out and built his house on the highest mountain crag, where storms threaten him every day. For food he flies through miles of rain and snow and wind.

The eagle, and not the oyster, is the emblem of America. —*The Kalends.*

Personal and Otherwise

Appointed Chairman of Promotional Committee

D. A. Hulcy

D. A. HULCY, president of the Lone Star Gas Corporation, Dallas, Texas, has been appointed chairman of the newly created Promotional Committee of the American Gas Association, it is announced by J French Robinson, president of the Association.

The Promotional Committee will supervise the activities of the Promotional Bureau soon to be organized at A. G. A. headquarters as part of the enlarged research and promotional program underwritten by the gas industry. Personnel of the committee, which will be announced shortly, will include representatives of the various sections, departments and interested committees of the Association, as well as members at large representing the best promotional talent in the industry.

The program contemplates appointment of a full-time promotional director on the A. G. A. staff and greatly enlarged gas advertising and promotional activities.

A member of the Lone Star staff since 1920, Mr. Hulcy advanced from executive vice-president to president in 1940. The Lone Star System embraces more than 300 towns and cities in Texas and Oklahoma.

National Safety Council Honors Stilwell

IN appreciation of his five-year service as president, the National Safety Council presented to Colonel John Stilwell, Consolidated Edison Co. of New York vice-president, a handsome leather bound volume of letters praising his leadership, and a gold life membership medal. The presentation was made at the organization's recent annual banquet in Chicago when Colonel Stilwell resigned as president and was elected chairman of the council's board of directors.

Colonel Stilwell had served for two years as head of the Greater New York Safety Council when he was chosen, in 1939, to direct the National Council's greatly expanded wartime program. Formerly the council, with a membership of 5,000 companies, had confined itself to industrial safety which accounted for only about 20 percent of the country's accidents. Under Colonel Stilwell's leadership, the program was broadened to include the whole field of traffic, home, farm and school safety. The council obtained the cooperation of the other ninety-six national safety groups and also promoted safety through such organizations as women's clubs, schools and the Grange. By public subscription it raised two and a half million dollars to finance its public program.

Moroughan Appointed Sales Manager

EFFECTIVE March 1, Donald M. Moroughan was appointed as domestic sales manager of New Jersey Power & Light Company.

Mr. Moroughan has had twenty years experience in the utility business, starting in Messina, New York, in 1925. From 1934 to 1945, he was sales supervisor for Metropolitan Edison Company at Easton, Pennsylvania, and has also been associated with New Jersey Power & Light Company at Phillipsburg, New Jersey.

His new appointment fills the New Jersey Power & Light Company vacancy created by the recent election of William F. Moses to Vice-President in Charge of Customer and Employee Relations.

Elected a Director

EDWARD F. BARRETT, president of the Long Island Lighting Company and treasurer of the American Gas Association, has been elected a director of the Nassau County Trust Company of Mineola, L. I. He has had a long and varied experience in the metropolitan banking field, and is first vice-president and a trustee of the East River Savings Bank and a director of the Public National Bank and Trust Company. He is also a director of the Utilities Mutual Insurance Company.

Hewson Resigns From Heating Council

WILLIAM B. HEWSON, advertising manager of The Brooklyn Union Gas Company, has resigned from membership of the Metropolitan House Heating and Air Conditioning Council. Mr. Hewson was chairman in 1943 and at the time of his resignation was chairman of the Postwar Planning Committee of the Council.

Joseph A. Reynolds, retail sales supervisor of The Brooklyn Union Gas Company, was elected to take Mr. Hewson's place as one of the company's representatives. Edward J. Gerridge, supervisor of house heating and secretary-treasurer of the council, is the other Brooklyn Union representative.

McDonald Named Publicity Director

George A. McDonald

GEORGE A. McDONALD, for the past eight years public utility and railroad editor for *The New York Sun*, has been appointed director of publicity for the American Gas Association. He will have charge of general publicity in coordination with the expanded program of research, advertising and promotion that has been underwritten by the gas utility companies throughout the country.

Mr. McDonald, in addition to his newspaper experience, has a background of fifteen years in promotion and publicity work in the food and home furnishings fields. He served as a member of the advisory council that initiated the first advertising and promotion campaign undertaken by the Carpet Institute of America.

He was a charter member of the New York Financial Writers' Association and served as an officer and director of that association from the time of its inception.

Cincinnati Vice-President

APPOINTMENT of Walter R. Keagy as vice-president of the Cincinnati Gas & Electric Company was announced March 15 by H. C. Blackwell, president.

Mr. Keagy entered the Cincinnati organization in 1929 as manager of its Customers' Service Department. He is secretary-trustee of the Cincinnati Electrical Association and is a member of the Customers' Relations Committee, Accounting Section, of the American Gas Association.

Walter R. Keagy

George K. Kuhn Retires After 45-Year Record

GEORGE K. KUHN, purchasing agent, United Light and Power Service Company with offices in Davenport, Iowa, retired March 1. Until a permanent appointment is made, Waldo H. Fahrner will serve as acting purchasing agent.

The United Light and Power Service Co. provides purchasing and other services for a large number of operating companies affiliated with the United Light and Power Company and the United Light and Railways Company.

Mr. Kuhn's retirement marks the end of a 45-year period of service in the public utility field, 37 years of which have been spent in the purchasing end of the business.

Starting with the Alton Granite and St. Louis Traction Company of Alton, Illinois, in 1900, shortly after graduating from high school there, he later worked for the East St. Louis and Suburban Railways Company in East St. Louis.

In 1906, he became associated with the old Tri-City Railway and Light Company which supplied gas, electric, and transportation service for Davenport, Iowa, and Rock Island, Moline and East Moline, Illinois. He was put in charge of purchasing for that company in 1908.

In 1913, shortly after the Quad-City utilities became a part of the United Light and Railways Company, he was made director of purchases for the larger organization, with offices in Davenport where he has been located ever since.

Crouch Appointed General Manager

W. D. Crouch

AS part of its post-war program for expansion and product development, John A. Robertshaw, president of the Robertshaw Thermostat Company, announces the appointment of W. D. Crouch as general manager of the Commercial and Industrial Division of that company.

In making this announcement, Mr. Robertshaw said: "Mr. Crouch will make his headquarters at the main office at Youngwood where we will have the advantages of close contact between sales, research, engineering and production. It is believed that this step will be beneficial to the handling of regular business and will advance the application of thermostats to many new products and industries.

"Mr. Crouch has been associated with the Robertshaw Thermostat Company since 1918. He is one of the pioneers in the thermostat field. The wide recognition thermostats have received in the commercial cooking field is due, in no small part, to the promotion job done under his direction while sales manager of this Division."

Mr. Crouch has been a member of the Industrial and Commercial Gas Section of the American Gas Association for a number of years and at present is a member of the Section's Food Service Equipment Committee.

At the same time, it was announced that Joseph L. Gabris, formerly of the St. Louis Division of the Robertshaw Thermostat Company, has been appointed district manager with headquarters at 30 Church Street, New York.

Coffman Becomes Chief of FPC Rates

THE Federal Power Commission has appointed Edgar S. Coffman chief of the division of rates and research, succeeding H. Zinder.

Mr. Coffman was with the commission for 11 years from 1933 to 1944 in various capacities, his most recent position being that of principal rate investigator. He went to the FPC from the Reconstruction Finance Corp., where he has been electric power and gas consultant and served as assistant power procurement officer for Defense Plant Corp., Rubber Reserve Co., and Defense Supplies Corp.

Prior to entering the federal service, Mr. Coffman was with the Power Authority of New York and spent six years as staff engineer with the Indiana Public Service Commission.

Johnston Heads Sales

ALLAN JOHNSTON, former industrial salesman of United Gas Pipe Line company, with headquarters in the general office at Shreveport, was appointed manager of the company's industrial sales department, effective January 15. He succeeds the late Harry E. Randall.

Rochester Appoints Howe

ERNEST J. HOWE, of South Orange, N. J., vice-president of New York, Pennsylvania & New Jersey Utilities Co., was named vice-president in charge of finance for Rochester Gas & Electric Corp. on March 21.

Alan P. Tappan Promoted to Colonel

ADVANCEMENT of Alan P. Tappan, former first vice-president of the Tappan Stove Company, from the rank of lieutenant colonel to full colonelcy has been announced in Washington.

First stationed at Wright Field, Dayton, Ohio, he went to England late in 1942 and while there was commissioned a major. Returning from England, he was promoted to lieutenant colonel in the fall of 1943.

With his new commission, Col. Tappan will remain in Washington, D. C. with the Army Air Forces procurement division.

Texas College Honors Frank C. Smith

AMONG the appointments of Governor Coke Stevenson of Texas approved late in January by the State Senate was that of Frank C. Smith as a director of the Texas College of Arts & Industries, Kingsville. Mr. Smith has been a member of the board since 1939 and currently is serving as its president.

Another honor recently conferred upon Mr. Smith was his election to the board of directors of the Houston Chamber of Commerce for 1945.

On Cities Service Board

S. B. Irelan

S. B. IRELAN, president of Cities Service Gas Co., of Oklahoma City, whose election to the board of directors of Cities Service Co. was announced Mar. 22 by W. Alton Jones, president. Mr. Irelan's election fills the vacancy created by the resignation of Valentin R. Garfias, of Mexico City.

Kline Named Counsel, Holmes Resigns

ELECTION of Walter D. Kline as general counsel and also as a member of the board of directors of Consumers Power Company, Jackson, Mich., was announced Feb. 24.

In both capacities Mr. Kline succeeds Clyde J. Holmes, whose resignation because of ill health was accepted by the board of directors. Mr. Holmes, who has been associated with Consumers and predecessor companies for 38 years, had a major role in the development of the company, which now operates in 57 Michigan counties, supplying electric service to 500,000 customers and gas service to 225,000.

Mr. Kline has been with the company's legal department since 1916. For the last several years he has held the title of general attorney.

Corgan Gets Bureau of Mines Post

APPOINTMENT of Joseph A. Corgan as chief of the Anthracite and Coke Section of the Economics and Statistics Service, Bureau of Mines, was announced Feb. 28 by Dr. R. R. Sayers, director.

Mr. Corgan, an authority on the economics of coal, coke and other fuels, has been with the Government since 1937 and with the Bureau of Mines since 1940. He has served as acting chief of the section for the past six months.

Capt. Fink Moves Up

ELECTION of Capt. Henry Fink as vice-president and member of the board of directors of the Michigan Consolidated Gas Co., Detroit, was announced February 21 by Chairman William G. Woolfolk. Capt. Fink will continue his duties as general manager of the Detroit district.

All other officers of the company were re-elected.

Schultz Advanced

ELECTION of James A. Schultz as assistant treasurer of Consumers Gas Company has been announced by Allyn C. Taylor, president. The action was taken by the board of directors at its meeting on February 21. Mr. Schultz is also secretary and treasurer of the Reading Gas Company.

For many years Mr. Schultz has taken an active part in the affairs of the American Gas Association and the Pennsylvania Gas Association, having served on many committees. Currently he is treasurer of the Pennsylvania Gas Association.

Kimball on Board

JOHN T. KIMBALL of Syracuse, vice-president of Central New York Power Corporation, has been elected a director of the company, it was announced by John L. Haley, president.

Mr. Kimball for several years has been rate and valuation engineer for Niagara Hudson system companies. In addition to his connection with Central New York Power Corporation, he is a vice-president and director of New York Power and Light Corporation.

Obituary

JOSEPH J. BRENNAN, vice-president of the Memphis Light, Gas and Water Division of Memphis, Tenn., died February 19.

An enthusiastic member of the American Gas Association and a valuable operating executive, Mr. Brennan was widely known in the gas industry.

STEPHEN P. BURKE, professor of chemical engineering at Columbia University, died March 10 in New York City. He would have been 48 years old the following Sunday.

Chairman of the A. G. A. Technical Section Subcommittee on the Use of Oxygen in Gas Manufacture, Dr. Burke was recognized as an authority in his field and was a most valued contributor to the gas industry. He had recently attended several meetings of the Manufactured Gas Department and the Technical Section. He was also a past chairman of the A. G. A. Chemical Committee.

Dr. Burke received a B.S. from Columbia in 1917 and three years later was graduated as a chemical engineer from the School of Mines, Engineering and Chemistry of the same University. He also held a Ph.D. from Columbia, awarded in 1922.

During the next eight years Dr. Burke was with the Combustion Utilities Corporation for a year as a research chemist, then as research director. From 1930 to 1936 he was chairman of the graduate council and director of the industrial science division of the University of West Virginia.

From 1936 to 1939 Dr. Burke was research director for the Consolidation Coal Company, and since 1936 he had practiced as a consulting engineer. Going to Columbia University in 1939 as a visiting Professor of Chemical Engineering, he was placed permanently on the faculty in 1941.

PHILIP H. GADSDEN, a vice-president of the United Gas Improvement Company at his retirement three years ago, died Feb. 27 in his home in near-by Overbrook. He was 78 years old.

Mr. Gadsden achieved national notice in 1934 and 1935, when, as chief spokesman for the utility companies, he waged a relentless but losing battle against the Utility Holding Company Bill, a measure aimed at wiping out the country's principal holding companies.

Born in Charleston, S. C., he was a descendant of General Christian Gadsden of the Revolutionary War, who designed the famous rattlesnake flag, "Don't Tred on Me," which was used by Colonial troops before the Stars and Stripes became the national emblem. He was graduated from the University of South Carolina in 1888 and two years later was admitted to the South Carolina bar. In 1903 he was elected president of the Charleston Consolidated Railway and Lighting Company, and in 1918 he came to Philadelphia as a vice-president of the U. G. I.

During the first World War, Mr. Gadsden served as chairman of the war board of the American Electric Railways Association, chairman of the National Committee on Public Utility Conditions and on the Federal Electric Railways Commission.

He was a longtime member of the American Gas Association's Executive Board and was active in many of its activities.

S. A. "SANDY" MACDONALD, 44, genial Portland Gas & Coke Company appliance dealer coordinator for seven years and a veteran of both world wars, died suddenly at his home March 18.

He had received an honorable discharge from the navy only last January, returning to the position he held at the time of his enlistment in November, 1942. Apparently he had been in good health, having worked as usual the Saturday morning before his death.

In the present war he was a specialist 1st class in navy recruiting, a job he found disappointing compared with sea duty in the last war as boatswain's mate on the U. S. S. *Princeton*. He was a member of Navy post, No. 101, American Legion.

He was well known in the gas industry, especially in the Pacific Northwest.

SIR WALLACE BRUCE. Information has been received of the death in Adelaide, Australia, of Sir Wallace Bruce, for many years Director of the South Australia Gas Company. Sir Wallace visited the United States in September 1936 when the Managing Director of the American Gas Association gave a luncheon in his honor.

WILLIAM A. CASTOR, former superintendent of the meter division of The Philadelphia Gas Works Co., who died January 15 was a member of a large and prominent Philadelphia family, its name being preserved in the street name, "Castor Avenue."

He joined the Philadelphia utility in 1899, starting in the old Frankford distribution district, of which he became superintendent in 1904. In 1906, he became superintendent of the meter division, holding that position for more than twenty-eight years.

Mr. Castor attained an excellent reputation as a meter expert. He wrote many articles on gas meters, the best known of which is probably the American Gas Association pamphlet, "Instructions for the Testing and Repairing of Gas Meters," of which he was co-author. He was frequently a member of the A. G. A. Subcommittee on Meters and served as its chairman.

In 1934, Mr. Castor, having requested a transfer from his position as superintendent to one of less responsibility, became a member of the distribution office force at Montgomery where he served from March 1 of that year until his death.

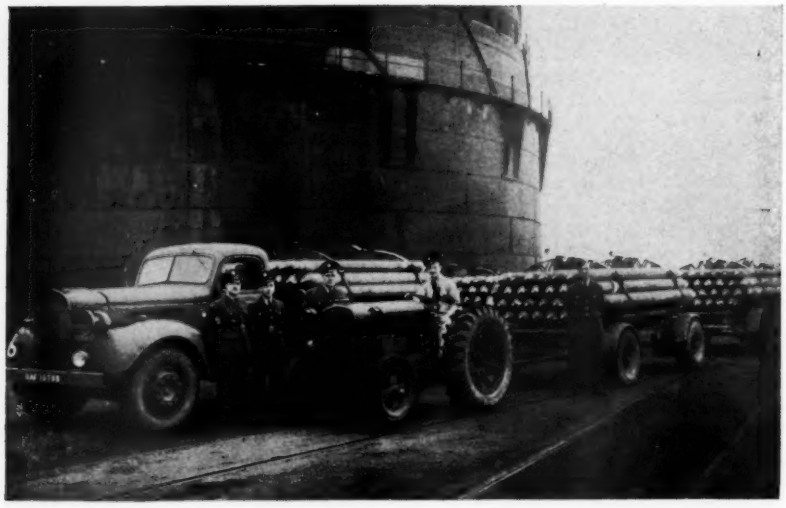
A. B. Macbeth

ALEXANDER B. MACBETH, president of the Southern California Gas Company, Los Angeles, from 1927 until his retirement in 1939, and a past president of the American Gas Association, died March 20 after a brief illness. He was 71 years old.

One of the nation's best known gas men, Mr. Macbeth had been identified with the Southern California company since 1914 when he went to Los Angeles as vice-president and general manager. He had been engaged in the gas business since 1898, and before going to California was associated with United Gas Improvement Co., the Atlanta Gas Co., and later was general manager of the Kansas City Natural Gas Co. in Missouri.

Under Mr. Macbeth's management, Southern California Gas Company grew from a small local gas company to one of the country's largest, most progressive organizations. Always active in national affairs, in addition to the American Gas Association, he served as president of the former Natural Gas Association of America, and California Oil and Gas Association, and as vice-president and director of the American Petroleum Institute.

He was also prominent in civic and business organizations and was a leader in the Navy League of the United States.



An R.A.F. convoy of hydrogen cylinders about to leave a southern England gas works for the balloon barrage center, established early in the war. Though no longer necessary, the balloon barrage was an important factor in defending England against enemy attacks and the gas industry did yeoman service in seeing that not a single balloon was short of hydrogen

Enemy-Owned U. S. Patents Now Available

PUBLICATION of two sets of Abstracts or short descriptions of 45,000 alien-owned U. S. patents seized by the Alien Property Custodian of the United States Government has just been announced by James E. Markham, the custodian.

These patents were developed by our enemies at a cost of millions of dollars and involved millions of man-hours of work. They contain many items which may be of value in prosecuting the war and also for postwar use. The patents cover practically every field of manufacture. Licenses to most of these patents are available to American citizens at a nominal fee of $15 per patent and are good for the life of the patent.

To help find items of particular interest, the Abstracts have been classified and indexed. The "Mechanical and Electrical Abstracts" (about 37,000 patents) consist of a short description and an illustrative drawing. The "Chemical Abstracts" (about 8,000 patents) consist of a condensed description of the chemical principle involved.

The set of the "Mechanical and Electrical Abstracts" is bound in four volumes comprising approximately 4,000 pages and includes a 48-page index. The set of "Chemical Abstracts" in 33 sections, contains about 2,000 pages and has a 400-page index. Each set of abstracts sells for $25 and may be obtained from the Office of Alien Property Custodian, 311 Field Building, Chicago 3, Illinois.

If the complete sets of abstracts are not desired, portions of them (sections or classes dealing with any one subject) are obtainable at proportional cost. An index showing the section or class titles and prices may be obtained free of charge by writing to the Alien Property Custodian, 311 Field Building, Chicago 3, Illinois.

Smiles

● A coordinator is a man who brings organized chaos out of regimented confusion . . .

A conference is a group of men who, individually, can do nothing, but as a group can meet and decide that nothing can be done . . .

A professor is a man whose job it is to tell students how to solve the problems of life which he himself tried to avoid by becoming a professor . . .

An efficiency expert is a man who knows less about your business than you do and gets paid more for telling you how to run it than you could possibly make out of it even if you ran it right instead of the way he told you to . . .

From "Flatwheels and Blowouts" in "Passenger Transport"

Record Gas Loads in California

EVEN traditionally warm Southern California felt the sting of Winter to an unprecedented degree this year. Biggest gas loads in the history of that area resulted when record cold waves swept the country.

From Roy M. Bauer, gas supply supervisor of Southern Counties Gas Co., it is learned that the biggest peak day requirements ever experienced in Los Angeles occurred on Wednesday, February 28, when the total potential demand for the system was estimated as approaching 900 million cubic feet. Actual sendout was in the neighborhood of 675 million cubic feet.

Mean temperature in Los Angeles was 46° on that day as compared with a mean temperature of 39° on the previous all-time peak day in 1937. (Weather bureau reported figure of 41° in 1937 was adjusted to 39° due to change of location of recording station.)

Bauer reported that a second peak day occurred on Sunday, March 4, when, with cold rains falling in the lowlands and several feet of snow piling up in the mountains, domestic users made the heaviest demands for any Sunday in history. To supply domestic, commercial and essential war industrial users, extensive curtailment of service to surplus industrial consumers was necessary throughout the stormy period, Bauer said.

No trouble from storm damage was experienced anywhere on the lines, and the gas companies were able to meet the record shattering demands without difficulty, he declared. The new La Goleta line, in service since the first of the year, was called upon throughout the period, and proved its value many times over. A total of 110 million feet was delivered through this line on Feb. 28.

U. G. I. Director

TLEAMING SMITH, vice-president of the Insurance Company of North America has been elected a director of The United Gas Improvement Company to fill the vacancy caused by the resignation of William C. Dickerman.

Personnel Service

SERVICES OFFERED

General Superintendent or **Manager** of medium sized gas property preferably in the south. Experience consists of 15 years' plant operation and 8 years as general manager with a record of low operating costs and resulting satisfactory net earnings. **1488.**

Utility **Engineer-Executive**; with wide experience in construction, operation, purchasing, sales and management in natural and manufactured gas, electric and water utilities; with excellent educational background; wishes to make change. Progressive with good record for results. **1489.**

Management Engineer—Services immediately available for duration of manpower shortage. Extensive experience in production, distribution, maintenance, rehabilitation and management. **1490.**

Engineer with broad technical and executive experience covering the design and operation of manufactured gas plants, distribution, original cost, and plant record studies. **1491.**

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Test Engineers; Research Engineers: Design and product development engineers for gas cooking appliances. Previous experience desirable but not necessary. Technical education essential. **0411.**

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